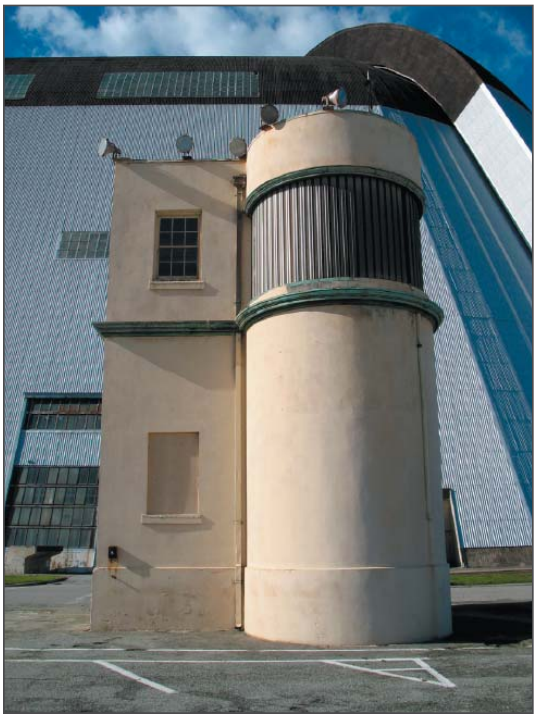
Building 32 Reuse Guidelines

NASA Ames Research Center, California



prepared for:

NASA/Ames Research Center

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Architectural Resources Group

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San Francisco, California

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Introduction

NASA Ames Research Center and Architectural Resources Group, Architects, Planners & Conservators, Inc. (ARG) have developed Reuse Guidelines for the Observation Tower, Building 32, at the U.S. Naval Station at NASA Ames Research Center, California. This report is one of a series prepared for many of the historic buildings at the site. The Reuse Guidelines have been designed to assist NASA Ames professional staff, tenants, and their consultants in rehabilitating structures on the historic Navy base by identifying character-defining features, outlining the opportunities for reuse and evaluating code deficiencies.

I. Executive Summary

Constructed in 1933 as a part of NASA's construction campaign, Building 32 is a two-story, wood-frame, tower finished in stucco and has a concrete base. The building is characterized by its distinctive irregular plan, and has an adjoining two-story bay at its northeast corner and a retractable metal panel at the second story. Historically used as an observation tower to direct dirigible takeoffs and landings, the building underwent alterations at an unknown date to include a third story addition with a metal balcony. Today, the building is unoccupied.

The United States Naval Air Station Sunnyvale, California (the historic name of the base) was listed on the National Register of Historic Places (NRHP) as a historic district in 1994 for its important role in the development of U.S. Naval aviation prior to World War II and as a collection of buildings reflective of early twentieth-century military planning, engineering, and construction. (See Appendix 7 for the NRHP Moffett Field District Nomination). Building 32 is a contributor to the district and retains a fair degree of integrity. Constructed in 1933, many of the building's character-defining features are intact on the exterior. It is not known to what extent the character-defining features are intact on the interior, as access to the interior of Building 32 was limited by debris, hazardous materials, and poor structural condition. The two-story structure retains its original volume. (Character-defining features, including significance and condition ratings are listed in section VII and Appendix 1.)

The building is currently not in use. Its future use remains to be determined. Reuse of the building should comply with *The Secretary of the Interior's Standards for Rehabilitation (The Standards)*. *The Standards* can be accessed on the National Park Service website (www.nps.gov) and are presently located at the following URL: http://www.nps.gov/history/hps/tps/tax/rhb. Plans for the reuse of Building 32 should take into consideration the preservation of the building's character-defining and contributing features, including, but not limited to, the overall form of the building, fenestration pattern, materials, and central open interior space. Changes to non-character-defining features may be undertaken, but the impact to the character defining and contributing features should be carefully evaluated.

Future renovations will require Fire/Life Safety and Disabled Accessibility upgrades to comply with current codes. These include, but are not limited to, the addition of fire sprinklers, exit path of travel and exit door upgrades, and disabled access improvements to door and door hardware. The impact of these upgrades to the character defining and contributing features should be carefully evaluated.

Further analysis is required for the management of hazardous materials and upgrades to the mechanical, electrical and structural systems. Existing mechanical flues, ducts and conduits protruding from windows and exposed on the exterior should be removed. The impact of these upgrades to the character defining and contributing features should also be carefully evaluated.

II. Project Team

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III. Methodology

ARG staff conducted site reviews of Building 32 in January and October 2006. During the site visits, notes were taken on the character-defining features of the building and photographic documentation was completed on the exterior as well as major interior spaces. Documents were provided by NASA Ames Research Center and were used as a general reference in the production of this report. The verification of the accuracy of the documents was not included in the scope of work.

Site reviews were conducted with the understanding that the current use of the building would be continued. The site reviews were limited to a general observation of the buildings and building components and detailed survey of all interior spaces was not included in the scope of work. Furthermore, limited access to some areas of the building were required due to issues of security, privacy, safety, or other limitations.

ARG staff reviewed both primary and secondary research materials at the following institutions:

- 1950 Navy Docks & Yards Micro Film;
- Engineering Documentation Center (located in Building N-213); and
- Ames Imaging Library (located Building in building N-241).

The following documents were utilized as the main sources of information:

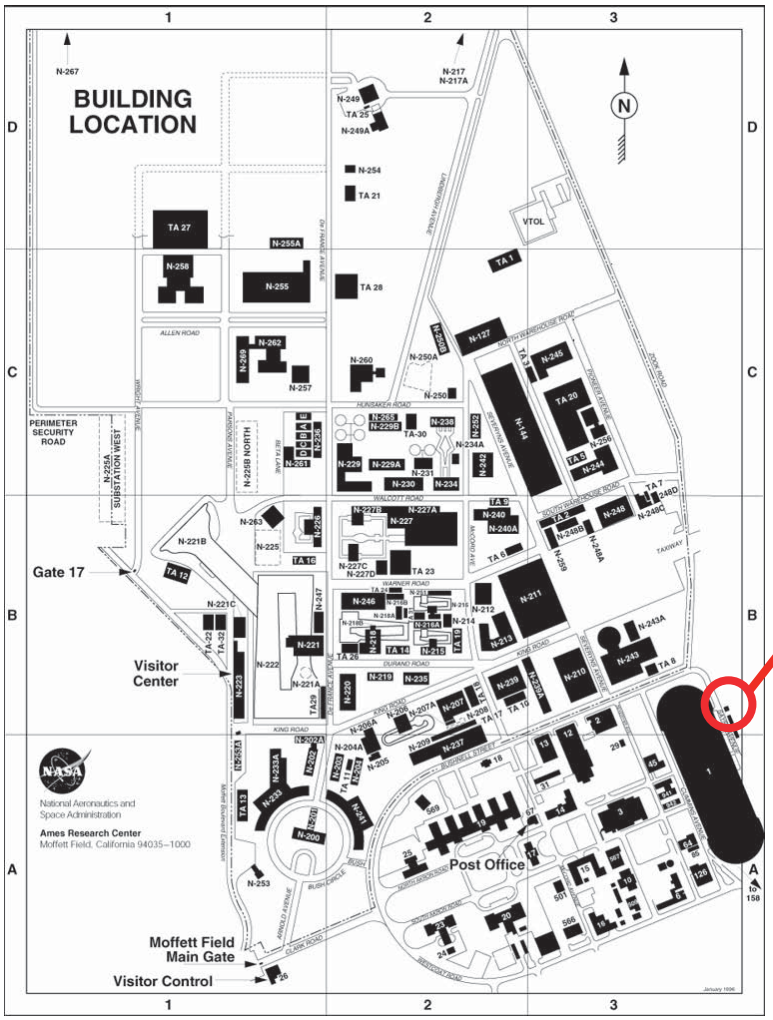
- The 1994 National Register of Historic Places Nomination Form for the US Naval Air Station Moffett Field Central Historic District;
- Aerial photographs dating from 1931 through 1944; and
- Architectural Drawings including;
    - U. S. Naval Air Station Sunnyvale, Sunnyvale, California. “Service and Housing Facilities for Floodlights and Landing Fields, Plans, Elevations and Details.” Drawings dated 28 October 1933.

East Elevation of Building 32.

IV. Building 32 Summary

Location:	Sayre Avenue, Moffett Field
Area:	NASA Ames Research Center - Central Historic District
Date of Construction:	1933
Historic Structure:	Yes
Historic Use:	Observation Tower
Current Use:	Unoccupied
Hazard Level:	Ordinary
Number of Floors:	Two
1st Floor:	290 gross ft^2
2nd Floor:	290 gross ft^2
Total:	580 gross ft^2
Exterior Materials:	Concrete base and steps, wood stud walls with integral color stucco
Construction Frame:	Concrete base and wood frame wall, floor/ceiling and roof construction

The buildings in the eastern, industrial section, such as the enormous Hangar 1 (the dirigible hangar) and Building 2, were placed on a grid with very little green space or relationship between the buildings



Ames Research Center, Moffett Field, Calif. Building Location Plan." February 2000.

V. Historical Background and Site Context

The dirigibles were part of a domestic security program designed by Admiral William A. Moffett. The dirigibles were capable of staying airborne for much longer periods of time than airplanes and were considered ideal for conducting reconnaissance of the nation's coastlines. The 1933 station was defined by perimeter roads: Wescot Road to the south and west, Bushnell Road to the south and west, and Sayre Avenue to the east. The base was arranged in a formal and hierarchical arrangement typical of American military base design. McCord Avenue, which runs north/south, divided the base into halves; the administration functions were located to the west and the industrial functions, including the massive dirigible hangar, were positioned to east. The western section, including the Administration Building (Building 17), Dispensary , (Building 23)

The two Observation Towers (Buildings 32 and 33) were constructed on the landing strip for the large dirigibles, east of Hanger 1. All of the buildings within the original base, with the exception of Hangar 1 and the two Observation Towers, were constructed in the Spanish Colonial Revival Style.

Building 32 was constructed during the 1931-1933 building campaign. Plans for the Observation Tower, Building 32, were approved on October 28, 1933. The Observation Tower faces west, toward the east elevation of Hanger 1. The building is a small, concrete base and wood frame structure with an irregular footprint. The second floor of the Observation Tower functioned as the observation point.

The United States Naval Air Station Sunnyvale, California was listed as a historic district in the National Register of Historic Places (NRHP) in 1994. The Period of Significance for these structures is 1930–1935 and 1942–1946, which corresponds to the period of Navy occupation. Building 32 is a contributor to the district.

VI. Building Description

Building 32 is a small, two-story structure with an irregular-shaped footprint. The building is composed of a two-story, square tower with a round, two-story, adjoining bay, located on the northeast corner of the building. The exterior walls are wood stud walls, sheathed in stucco over diagonal sheating. The tower is an open volume at the first and second floors. A stairway located along the north interior wall provides access to the second story. The second floor of the round tower functioned as the observation location with a metal, retractable panel. Historically, the metal panels withdrew to reveal the Sperry light. It was also from this location that the flagmen would direct the landing of the dirigibles.

A high watertable surrounds the base of the building. The first and second stories are articulated by a projecting, copper stringcourse. All of the windows are recessed, wood-frame, double-hung, six-over-six sash with wood sills. At the present time, all windows on the first floor are covered with plywood boards on the exterior façade.

A single entrance is located on the west (primary) elevation. Originally the entrance was comprised of a paired, multi-lite, sash door with four-lite transom. Three concrete steps and landing provide access to the entrance. The door is no longer extant and the entry is boarded with limited access. A single, wood-frame, double-hung, six-over-six sash window occupies the second story of this elevation.

The north, south, and east elevations are similar. A single, wood-frame, double-hung, six-over-six, sash window, centrally located above the stepped watertable punctuates the first floor of the north, south and east elevations. The windows punctuating the second floor are similar in size and scale to those located on the first floor.

A round tower marks the northeast corner of the building**.** Directly above the copper stringcourse is a metal, roll-away door, providing a 270-degree observation point.

Overall, in form, materials, and detail, the exterior portion of the Observation Tower (Building 32) retains

a fair amount of its historic appearance.

Exterior Landscape/Setting Modifications
The building was originally constructed as one of two Observation Towers to help facilitate the safe take-off and landing of the dirigibles to and from Hanger 1. The location and setting of the Observation Tower remains unchanged from initial construction. However, the discontinued use of Hanger 1 and its relating Observation Towers has resulted in a change in the building's context and integrity. In addition, general deterioration to the building and its surroundings has occurred as a result of under use.

VII. Historic Character-Defining Features

Refer to Appendix 1 for a matrix of character defining features, including specific location of building components. For illustrated plans and elevations, see Appendix 3, Significance Diagrams.

Alteration of significant and contributing building components shall be in keeping with original design, configuration and material. For more information, see *The Secretary of the Interior's Standards for the Treatment of Historic Properties. The Standards* can be accessed on the National Park Service website (www.nps.gov) and are presently located at the following URL: http://www.nps.gov/history/hps/tps/tax/rhb.

See Appendix 5, Current Conditions Photographs for photos showing the character-defining building components listed below. For building floor plans, see Appendix 2, Existing Floor Plans and Rehabilitation.

1. Significant Character-Defining Features: these are the features that convey the building's historic character and significance. Alteration or removal of these features could result in a loss of integrity and should be avoided. Note that second floor features were not observed.

The following are significant features:

- Water table base course;
- Cement plaster surface;
- 6/6 double hung windows;
- 4-lite transom and frame above door;
- Door frame
- Metal roll-away door;
- Ornamental copper bands;
- Collection boxes;
- Vents;
- Light fixture at west elevation; and
- Interior first floor features including:
  - Interior configuration
  - Wood stair;

Illustration 1. Copper downspouts and collection boxes are significant features. (Source: ARG, October 2006)

Illustration 2. Ornamental copper bands are a significant feature. (Source: ARG, October 2006)

Illustration 3. Concrete steps and water table base course are significant features. (Source: ARG, October 2006)

Illustration 4. Metal roll-away door is a significant feature. (Source: ARG, October 2006)

Illustration 5. Six-over-six, wood, double-hung windows are a significant feature. (Source: ARG, October 2006)

Illustration 6. Interior wood stairs and metal pipe railing are significant features. (Source: ARG, October 2006)

- Floor (concrete);
- Walls (plaster);
- Ceiling (plaster); and
- Metal pipe railing.

- Exterior concrete steps

Note: the second floor, which was not observed, has been rated significant.

2. Contributing Features: these features are important elements that contribute to the understanding of the original design. Alteration or removal of these features may be necessary for programmatic or building system requirements. However, removal should be minimized and where necessary mitigated.

The following are contributing features:

- There are no contributing features.

3. Tertiary Features: these features are original elements of the building that are of a lower importance relative to the understanding of the original design. Alteration or removal of these features, if necessary, would have a limited affect on the integrity of the building.

The following are tertiary features:

- There are no tertiary features. (2nd floor was not observed.)

4. Non-Contributing Features: these features are elements of the building that have been remodeled or areas where additional alteration would not affect the original integrity of the building. In some cases, removal of the non-contributing features may be beneficial to the historic integrity of the building.

The following are non-contributing features:

- Exterior lighting fixtures (on parapet wall); and
- Wood replacement door.

5. Conservation of Intact Historic Fabric

The following materials require special care and treatment in their maintenance and rehabilitation:

- All copper including ornamental bands, downspouts and collection boxes
- Wood sash windows and frames;
- Wood doors and frames; and
- Cement plaster.

VIII. Opportunities for Reuse

Buildings 32 and 33 are not occupied are not expected to regain their historical function as Observation Towers. Building 32 offers a number of opportunities for adaptive reuse, and these opportunities should be considered together with Building 33 and in relation to Hangar 1.

The Moffett Field Museum was housed in Hangar 1 for a number of years before closing in 2002. If Hangar 1's use as a museum is renewed, or any alternative use of Hangar 1 is pursued, incorporation of the Observation Towers into the overall design should be considered.

Architectural modifications to Building 32 should start with cleaning the building interior of debris and hazardous materials, followed by structural stabilization of the interior wood stairs to provide access to interior significant character-defining features. Any alteration should be approached carefully since the building has unique historical and architectural values.

IX. Code Evaluations and Recommendations

A. Fire/Life Safety

Description

Building 32 is a two-story structure, built in 1933 as an Observation Tower, similar to Building 33. The sole building entry is on the west façade, reached by three steps and a high 3 in. threshold. Building 32 is located near northeast corner of the Hangar 1. Building 32 is no longer in use, but the original exterior features are still intact.

The first floor of the tower is an open volume and is currently used for storage. The second floor of the round tower functioned as the observation location where the flagmen directed the landing and departure of dirigibles. The building is classified as B Occupancy and the construction type is Type V-N. Section IX B. includes a glossary of building construction types and occupancy types that exist within the scope of this report.

California's State Historical Building Code (SHBC), located in chapter 34 of CBC, shall be used in conjunction with the California Building Code as stated in section 8-102.1: "These regulations are applicable for all issues regarding building code compliance for qualified historical buildings or properties. These regulations are to be used in conjunction with the regular code to provide alternatives to the regular code to facilitate the preservation of qualified historical buildings or properties. These regulations shall be used whenever compliance with the regular code is required for qualified historical buildings or properties."

Analysis

1. Occupancy and Construction type: Building 32 is classified as B Occupancy and Type V-N construction. Table 5-A of the CBC allows Occupancy B to be construction type V-N.

Recommendation: The current occupancy is permitted in the existing building construction type.

2. Location on Property: CBC Table 5-A limits the exterior bearing walls to be minimum One-hour less than 20 ft. to property lines. Building 32 is separated on four sides and does not need exterior wall and opening protection.

Recommendation: Modifications to the building based on its location on the property are not required.

3. Allowable Area: According to CBC Table 5-B the allowable area for B Occupancy/ Type V-N is 8,000 ft². Building 32 does not exceed the allowable area.

Recommendation: Building 32 is within the allowable area.

4. Allowable Height: Table 5-B of the CBC limits the number of stories of the building to 2 stories and an overall height of 40 ft. for Construction Type V-N. Building 32 does not exceed the allowable height.

Recommendation: The building is within the allowable height.

5. Means of Egress Identification: Section 1003.2.8.2 requires the path of travel to and within exits to be identified with code compliant exit signs. Building 32 has one exterior exit door. The door is obviously and clearly identifiable and does not need to have an exit sign when approved by a building official.

Recommendation: No improvements needed.

6. Doors: CBC Section 1003.3.1.3 requires a clear opening of 32 in. CBC section 1003.3.1.5 requires the exit doors serving an occupant load of 10 or more to swing in the direction of egress. Building 32 occupancy load is less than 10. Section 1003.3.1.6.2 requires a level landing on each side of all doors that are part of the means of egress system. This section also requires the landing to be 44 in. in length when the door swings away and 60 in. in the direction of the door swing. The exit door has a clear opening of 32 in. and swings in the direction of egress, but the landing is only 3 ft. and it is approximately 3 in. lower than the first floor.

Recommendation: Fire/life safety requirements for Building 32 should be considered together with accessibility requirements. Currently the door is not original. Original construction documents show wood swing doors and a metal threshold. Building 33 door is still intact and provides a sample for Building 32 to replace in kind. Replacement doors should open 180 degree to provide minimum clear opening 29.5 in. as per CBC Section 8-603.2 preferred alternatives.

To extend the exterior concrete landing 44 in. and raise the platform to the interior level would greatly diminish the historical character of the building. 44 in. requirement for landing might be met by providing a separate, possibly temporary platform that is lightweight and visually unimposing, in conjunction with an accessible ramp to enter the building. CBC section 8-704 allows nonhistorical additions and nonhistorical alterations which are structurally separated from and existing historical structure. The original stairs must be kept and these projects should be carefully analyzed so as to not alter any significant character-defining features of the building.

7. Stairs and Guardrails: CBC section 1003.3.3.3 requires the rise and run of the stair to be a minimum of 7 in. and 11 in., respectively. CBC section 1003.3.3.6.1 requires all stairs (two or more risers) to have a handrail on each side. Section 509 of the CBC requires guardrails at all unenclosed floor or roof openings, open or glazed stairways, aisles, landings, ramps, balconies, or porches, which are over 30 in. above grade or the floor below. SHBC section 8-502.1 exception 5 allows the enforcing agent to accept "any other condition which will allow or provide for the ability to quickly and safely evacuate any portion of a building without undue exposure and which will meet the intended exiting and life safety stipulated by these regulations."
Both exterior and interior stair risers are 8 in. The run of the stair is 12 in. at the exterior and 10 in. at the interior. Exterior stairs don't have a handrail; interior stairs have a handrail on the wall side, and no guardrail.

Recommendation: Because of the size and limited occupancy of Building 32, alteration to the interior stairs is not recommended. Any alteration to this main feature of the building will impact the historical character of the building. The added handrails to exterior stairs should be compatible with existing interior handrails. Interior stairs should have a handrail on the wall and a guardrail on the inside sympathetic to the original handrail design.

8. Ramps: There are no ramps at Building 32.

Summary of Recommendations

1. Construction type: The current occupancy is permitted in the existing building construction type.

2. Location on Property: Modifications to the building based on the location on the property are not required.

3. Allowable Area: Building 32 is within the allowable area.

4. Allowable Height: The building is within the allowable height.
5. Means of Egress Identification: No improvements needed.

6. Doors: Fire/life safety requirements for Building 32 should be considered together with accessibility requirements. The requirement for a landing may be met by providing a separate, possibly temporary platform that is lightweight and visually unimposing, in conjunction with an accessible ramp to enter the building.
The building might also be considered exempt from some of these code requirements because of its historical character, when approved by the building official.
7. Stairs and Guardrails: Because of the size and limited occupancy of Building 32, alteration to the interior stairs is not recommended. Any alteration to this main feature of the building will impact the historical character of the building. The added handrails to exterior stairs should be compatible with existing interior handrails. Interior stairs should have a handrail on the wall and a guardrail on the inside sympathetic to the original handrail design.

8. Ramps: There are no ramps at Building 32.

B. Glossary of Terms: Construction and Occupancy Types

The following is a summary description of the Construction and Occupancy Types for Building 32.

Glossary of Construction Types, referenced from the 2001 California Building Code:

Type V-N	Type V buildings may be of any materials allowed by the 2001 CBC. Materials of construction and fire-resistive requirements shall be as specified in CBC Section 601. Structural framework shall be of steel or iron as specified in CBC Chapter 22, concrete as specified in CBC Chapter 19, masonry as specified in CBC Chapter 21, or wood as specified in CBC Chapters 6 and 23.

Glossary of Occupancy Types: Referenced from the 2001 California Building Code

Group B	A building or structure, or a portion thereof, for office, professional or service-type transaction, including storage of records and accounts; eating and drinking establishments with an occupant load of less than 50.

C. Disabled Accessibility

Analysis

1. Accessible Parking: CBC section 1129B.1 requires that where parking is provided for the public as clients, guests, or employees, accessible parking will also be provided. Section 1129B.4 requires one van accessible space for every eight accessible spaces, with a minimum of one van space.

> *Recommendation:* Building 32 has limited occupancy and one accessible parking space meets the code requirements. Provide one van accessible parking space as close as possible to the building entry.

2. Accessible Route: CBC section 1114B.1.2 requires an accessible route of travel to all portions of the building that are required to be accessible. The SHBC Section 8-604 allows for equivalent facilitation to be provided in lieu of a path of travel to all areas of the building where providing access "would threaten or destroy the historical significance or character-defining features of the building or site or cause unreasonable hardship."

> *Recommendation:* Providing wheelchair accessibility to second floor is only possible through the addition of an elevator. Considering the small size of the building, this addition would significantly impact character-defining features of the building. It is recommended that wheelchair access be provided to the first floor only, with a compatible, non-permanent separate ramp structure and landing at entrance door, providing access to the exterior entrance door. It is important to note that a ramp directly adjacent the building could negatively impact the building, and a ramp should be integrated into the proposed vertical access structure. An alternative to providing access to the first floor would be to provide equivalent facilitation at an accessible level. An example of the use of equivalent facilitation would be in the case that Building 32 be used for interpretive uses: displays and informational devices could be located adjacent the building at an accessible level.

3. Doors: Section 1133B.2.4 of the CBC requires a level landing on each side of a door. Section 1133B.2.4.2 requires maneuvering clearance to be 60 in. on the swing side of interior doors and 48 in. on the non-swing side of the door with a closer (44 in. without closer). Section 1133B.2.5.2 requires hardware that is hand operable with a single effort without requiring the ability to grasp.

> *Recommendation:* It is recommended that missing doors be replaced in kind. Original doors were wood swinging double doors. The front door at Building 33 is still intact as a sample. The replacement door should be furnished with code compliant hardware. The landing width and height should be compatible with the non-permanent platform mentioned above.

4. Stairs: Section 1133B.4.4 of the CBC requires striping for the visually impaired on the top and bottom nosing of each run of stairs at interior stairs, and at each nosing for exterior stairs. CBC Section 1133B.4.2 requires handrails to extend 12 in. beyond the top nosing and 12 in. plus the tread width, beyond the bottom nosing.

Recommendation: It is recommended that handrails for the interior stair wall and guardrail be provided. Extend these handrails 12 in. beyond the top nosing and 12 in. plus the tread width beyond the bottom nosing. Provide handrails for exterior stairs and extend these handrails 12 in. beyond the top nosing and 12 in. plus the tread width beyond the bottom nosing to meet code requirements. Provide striping for the visually impaired on the top and bottom nosing of each run of stairs at the interior, and at all stair nosings at the exterior.

5. Restrooms: There are no restrooms at Building 32.
6. Signage: Sections 1103.2.4, 1127B.3, 1129B.5, and 1115B.5 of the CBC require code-compliant signage identifying accessible entrances, parking, areas of refuge, passenger loading zone, toilet and bathing facilities, and exit signage at the exit stairs.

Recommendation: Because of the small size and occupancy load, many of these requirements are not applicable to Building 32. Provide "Accessible Van Parking" and "Tow Away" signage for the van accessible stall.

Summary of Recommendations

1. Accessible Parking: Building 32 has limited occupancy and one accessible parking space meets the code requirements. Provide one van accessible parking space as close as possible to the building entry.

2. Accessible Route: Providing wheelchair accessibility to second floor is only possible through the addition of an elevator. Considering the small size of the building, this addition would significantly impact character-defining features of the building. It is recommended that wheelchair access be provided to the first floor only, with a compatible, non-permanent separate ramp structure and landing at entrance door, providing access to the exterior entrance door. An alternative to providing access to the first floor would be to provide equivalent facilitation at an accessible level.

3. Doors: It is recommended that missing doors be replaced in kind. The replacement door should be furnished with code compliant hardware. The landing width and height should be compatible with the non-permanent platform mentioned above.

4. Stairs: It is recommended that handrails for the interior and exterior stairs and guardrails be provided. Provide striping for the visually impaired on the top and bottom nosing of each run of stairs at the interior, and at all stair nosings at the exterior.

5. Restrooms: There are no restrooms at Building 32.

6. Signage: Because of the small size and occupancy load, many of these requirements are not applicable to Building 32. Provide "Accessible Van Parking" and "Tow Away" signage for the van accessible stall.

D. Energy Conservation

Description

The Observation Tower structure is wood frame over concrete base. Insulation in the exterior walls could not be confirmed without destructive testing. According to original construction documents, there is no insulation inside walls, floor/ceiling, or roof/ceiling assemblies. Some deteriorated portions of wall were observed to have no insulation. The double hung windows are single glazed.

Analysis

As a contributing building in the historical district, Building 32 is exempt from energy code requirements.

> *Recommendation:* No improvements are proposed for the current condition. Should a rehabilitation be undertaken in the future, energy saving measures that are non-invasive could be implemented. Energy saving measures would include weather-stripping doors and windows, installation of wall and roof insulation where possible, and use of high-efficiency mechanical systems.

X. Future Studies Needed

A. Hazardous Materials

Although a hazardous materials report has not yet been completed, there are several types of historical materials and finishes that are known to contain asbestos and other hazardous materials in the building construction. The wrought iron finish and most painted surfaces in the building likely have some lead-based paint residues, and should be tested.

It is recommended that a complete hazardous materials report be completed on the building.

B. Mechanical and Electrical Systems

There is no heating, cooling, or air conditioning mechanical systems in the building. Currently, electrical systems are exposed, damaged, and non-compliant. All new mechanical and electrical systems should be designed to preserve the character of the significant materials and spaces identified in this report, and utilize energy efficient design principles to the extent possible.

C. Structural Systems

The building has a concrete base and wood frame upper structure. The damage on the exterior wood stud wall could not be confirmed without destructive testing. The exterior of the building is stucco over diagonal wood sheathing, which seems to be in stable condition. The floor/ceiling assembly, which has diagonal wood sheathing over wood joists, looks stable as well. The stair to the second floor is structurally in poor condition.

Overall, the building appears to be structurally in fair condition. In the course of rehabilitating the building, the structural system should be analyzed for seismic and gravity load deficiencies and reinforced as necessary. Strengthening provisions should be designed to preserve significant materials and elements.

NASA Ames Research Center
Building B-32 Reuse Guidelines

Appendix 1. Character-Defining Features

Character-Defining Features

Elements	Significance	Condition	Comments
Exterior			
North Elevations			
Water table base course	S	F	
Cement plaster surface	S	F	
Windows:			
6/6 Double hung wood windows	S	P	one at second floor exposed, one at ground floor (concealed behind wood infill panel)
Doors:			
Metal roll-away door	S	P	fixed in place (conceals Signal Tower)
Ornamental copper bands			
Upper band	S	P	at round portion of Tower
Lower band	S	F	
Collection box	S	F	
Vents	S	G	
East Elevation			
Water table base course	S	F	patched spall, new spalling at SE corner
Cement plaster surface	S	F	
Windows:			
6/6 double hung wood windows	S	P	one at second floor exposed, one at ground floor (concealed behind wood infill panel)
Doors:			
Metal roll-away door	S	F	fixed in place (conceals Signal Tower)

Significance Rating
S=Significant
C=Contributing
T=Tertiary
N=Non-contributing

Condition Rating
G=Good
F=Fair
P=Poor

Ornamental copper bands			
Upper band	S	P	at round portion of Tower
Lower band	S	F	
Collection box	S	F	painted at first floor only
Exterior lighting fixtures	N	P	on parapet wall
South Elevation			
Water table base course	S	F	
Cement plaster surface	S	F	
Windows			
6/6 double hung wood windows	S	P	one at second floor exposed, one at ground floor concealed behind wood infill panel (N)
Vent	S	G	
Ornamental copper band	S	F	
Exterior lighting fixtures	N	F	on parapet wall
West Elevation			
Water table base course	S	F	
Cement plaster surface	S	F	
Windows			
6/6 double hung wood window	S	P	
Doors			
Wood replacement door with 4-lite transom and frame	N/S	P	original transom (S) partially concealed behind wood infill panel
Ornamental copper band	S	F	
Light fixture	S	P	
Concrete steps	S	F-P	rusted and broken at corners
Interior			
Ground floor			

Significance Rating
S=Significant
C=Contributing
T=Tertiary
N=Non-contributing

Condition Rating
G=Good
F=Fair
P=Poor

Configuration	S	G	
Wood stair	S	P	
Floor (concrete)	S	P	
Walls (plaster)	S	P	
Ceiling (plaster)	S	P	ceiling finish missing in places
Metal pipe railing	S	G	
Second floor	S	N/A	not observed

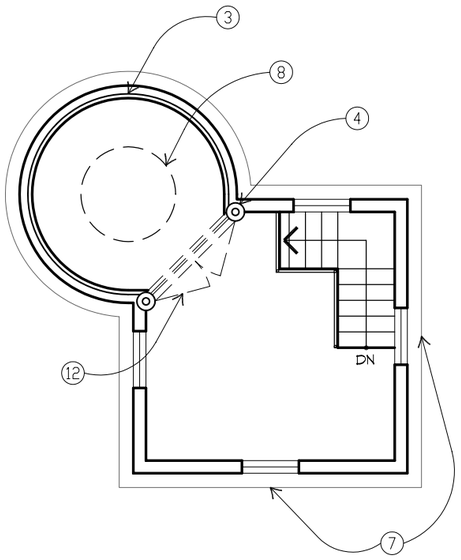
Character Defining Features Matrix

Significance Rating
S=Significant
C=Contributing
T=Tertiary
N=Non-contributing

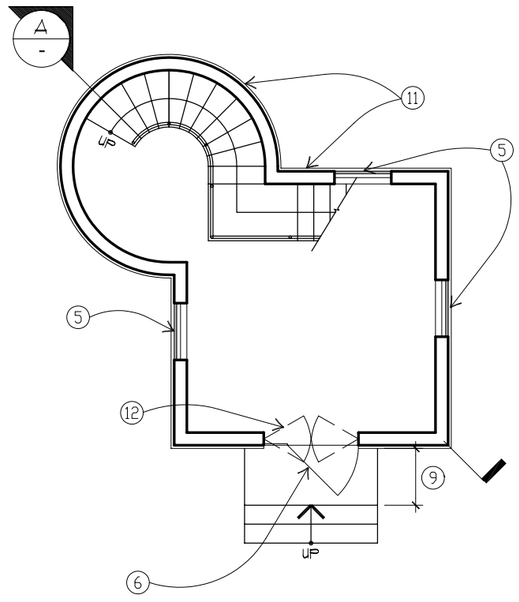
Condition Rating
G=Good
F=Fair
P=Poor

NASA Ames Research Center
Building B-32 Reuse Guidelines

Appendix 2. Existing Floor Plans & Rehabilitation



B 32 SECOND FLOOR PLAN
(AS PER ORIGINAL CONSTRUCTION DOCUMENTS & EXTERIOR ELEVATION)



B 32 FIRST FLOOR PLAN

REHABILITATION LEGEND & NOTES

1. EXTERIOR STUD WALLS, STUCCO FINISH OVER DIAGONAL SHEATHING, PLASTER INTERIOR FINISH
2. FLOOR/CEILING ASSEMBLY, DIAGONAL SHEATING OVER WOOD JOISTS, PLASTER CEILING FINISH
3. RETRACTABLE METAL DOOR THAT ROLLS AWAY HORIZONTALLY TO PROVIDE AN UNOBSTRUCTED 270 DEGREE VIEW OF THE RUNWAY/AIRFIELD, CURRENTLY FIXED CLOSED
4. VERTICAL DRUM, ROLL-AWAY DOOR COILS ABOUT
5. WINDOWS COVERED WITH PLYWOOD BOARDS
6. PLYWOOD PANEL DOOR, REPLACED ORIGINAL. FRAME AND TRANSOM ARE EXTANT.
7. COPPER ORNAMENTAL BAND AROUND BUILDING
8. ORIGINAL SPERRY LIGHT LOCATION
9. 36" LANDING, NOT CODE COMPLIANT
10. COPPER ORNAMENTAL BAND (SMALLER THAN LOWER ONE) AROUND CIRCULAR PORTION ONLY
11. CONCRETE BASE/ INTERIOR CONCRETE CURB LINE
12. ORIGINAL DOORS AS PER PROJECT

GENERAL NOTES

1. NOT ALL KEY NOTES APPEAR ON ALL SHEETS, KEY NOTES MAY APPLY TO ONE FLOOR ONLY.
2. REFER TO SECTION IX. "CODE EVALUATIONS AND RECOMMENDATIONS" FOR DETAILED DESCRIPTION.

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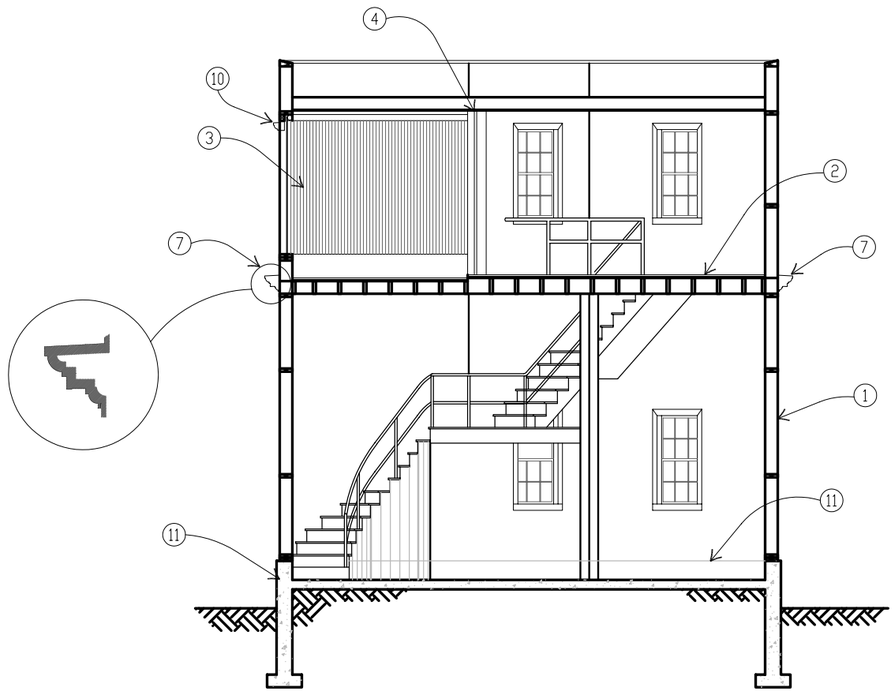
EXISTING PLANS & REHABILITATION

1/8" = 1'-0"

BUILDING 32
NASA Ames Research Center
Sunnyvale, CA

October, 2007

NORTH



SECTION A
(AS PER ORIGINAL CONSTRUCTION DOCUMENTS
& EXTERIOR ELEVATION)

REHABILITATION LEGEND & NOTES

1. EXTERIOR STUD WALLS, STUCCO FINISH OVER DIAGONAL SHEATHING, PLASTER INTERIOR FINISH
2. FLOOR/CEILING ASSEMBLY, DIAGONAL SHEATING OVER WOOD JOISTS, PLASTER CEILING FINISH
3. RETRACTABLE METAL DOOR THAT ROLLS AWAY HORIZONTALLY TO PROVIDE AN UNOBSTRUCTED 270 DEGREE VIEW OF THE RUNWAY/AIRFIELD, CURRENTLY FIXED CLOSED
4. VERTICAL DRUM, ROLL-AWAY DOOR COILS ABOUT
5. WINDOWS COVERED WITH PLYWOOD BOARDS
6. PLYWOOD PANEL DOOR, REPLACED ORIGINAL. FRAME AND TRANSOM ARE EXTANT.
7. COPPER ORNAMENTAL BAND AROUND BUILDING
8. ORIGINAL SPERRY LIGHT LOCATION
9. 36" LANDING, NOT CODE COMPLIANT
10. COPPER ORNAMENTAL BAND (SMALLER THAN LOWER ONE) AROUND CIRCULAR PORTION ONLY
11. CONCRETE BASE/ INTERIOR CONCRETE CURB LINE
12. ORIGINAL DOORS AS PER PROJECT

GENERAL NOTES

1. NOT ALL KEY NOTES APPEAR ON ALL SHEETS, KEY NOTES MAY APPLY TO ONE FLOOR ONLY.
2. REFER TO SECTION IX. "CODE EVALUATIONS AND RECOMMENDATIONS" FOR DETAILED DESCRIPTION.

ARCHITECTURAL RESOURCES GROUP
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EXISTING PLANS & REHABILITATION

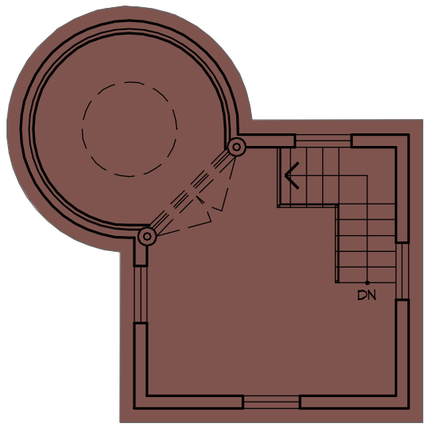
1/8" = 1'-0"

BUILDING 32
NASA Ames Research Center
Sunnyvale, CA

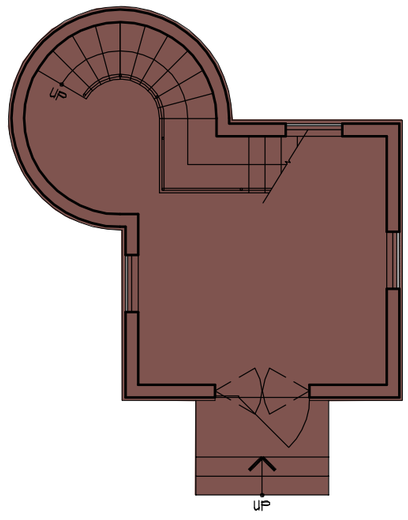
October, 2007

NASA Ames Research Center
Building B-32 Reuse Guidelines

Appendix 3. Historic Character-Defining Significance Diagrams



B 32 SECOND FLOOR PLAN
(AS PER ORIGINAL CONSTRUCTION DOCUMENTS & EXTERIOR ELEVATION)



B 32 FIRST FLOOR PLAN

GENERAL NOTES

1. THESE DIAGRAMS ARE INTENDED TO SHOW THE PRINCIPAL CHARACTER-DEFINING FEATURES, NOT SPECIFIC COMPONENTS.

2. FOR A MATRIX OF SIGNIFICANCE RATINGS FOR INDIVIDUAL BUILDING COMPONENTS, REFER TO APPENDIX I. "HISTORIC CHARACTER-DEFINING FEATURES".

CHARACTER-DEFINING SIGNIFICANCE DIAGRAMS LEGEND

- SIGNIFICANT FEATURE
- CONTRIBUTING FEATURE
- TERTIARY FEATURE
- NON-CONTRIBUTING FEATURE
- NEW CONSTRUCTION - PROPOSED

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HISTORIC CHARACTER-DEFINING SIGNIFICANCE DIAGRAMS - PLANS

8 0 8 16
1/8" = 1'-0"

BUILDING 32
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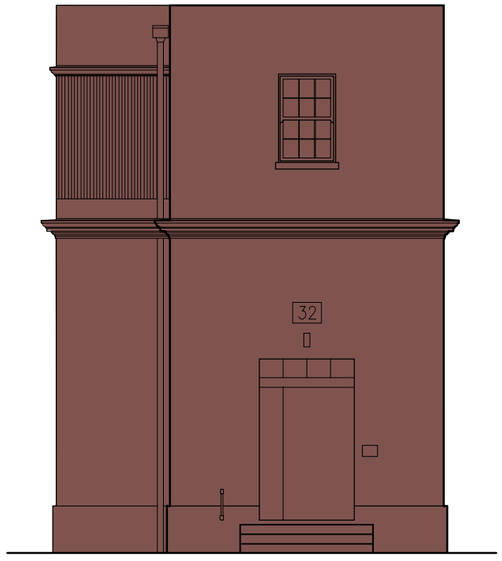
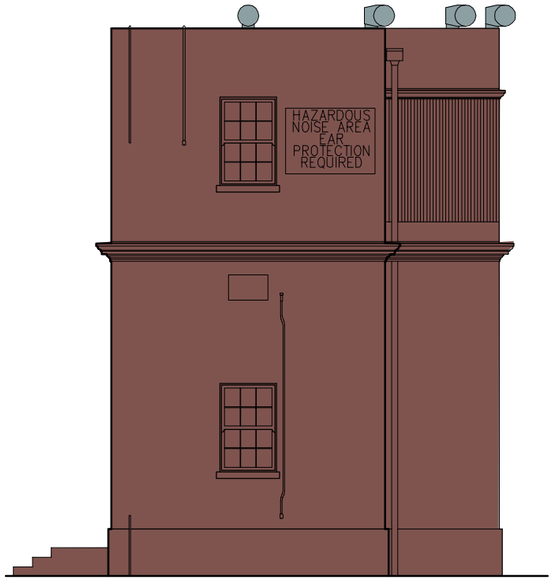
Sunnyvale, CA

OCTOBER, 2007

PROJECT NORTH
TRUE NORTH



WEST ELEVATION



SOUTH ELEVATION

GENERAL NOTES

1. THESE DIAGRAMS ARE INTENDED TO SHOW THE PRINCIPAL CHARACTER-DEFINING FEATURES, NOT SPECIFIC COMPONENTS.

2. FOR A MATRIX OF SIGNIFICANCE RATINGS FOR INDIVIDUAL BUILDING COMPONENTS, REFER TO APPENDIX I. "HISTORIC CHARACTER-DEFINING FEATURES".

CHARACTER-DEFINING SIGNIFICANCE DIAGRAMS LEGEND

- SIGNIFICANT FEATURE
- CONTRIBUTING FEATURE
- TERTIARY FEATURE
- NON-CONTRIBUTING FEATURE
- NEW CONSTRUCTION - PROPOSED

ARCHITECTURAL RESOURCES GROUP
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HISTORIC CHARACTER-DEFINING SIGNIFICANCE DIAGRAMS - ELEVATIONS

8 0 8 16
1/8" = 1'-0"

BUILDING 32
NASA Ames Research Center
Sunnyvale, CA

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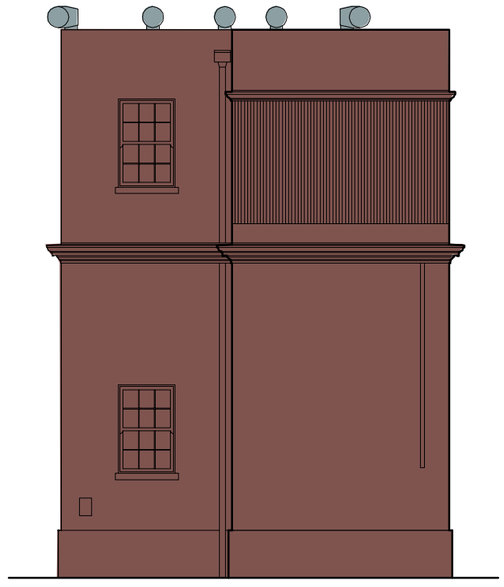
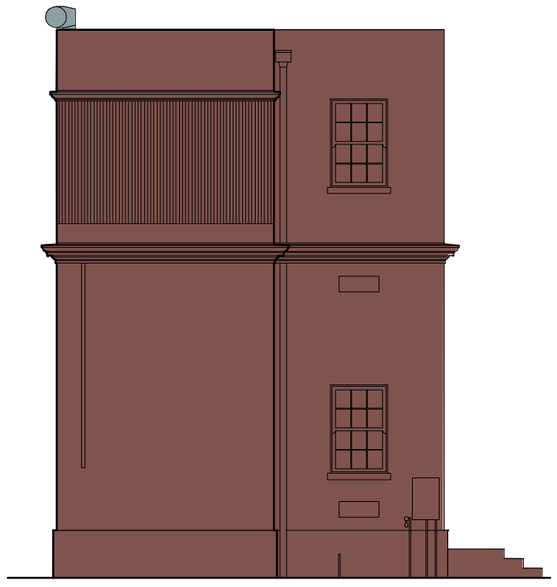


EAST ELEVATION



NORTH ELEVATION

GENERAL NOTES

1. THESE DIAGRAMS ARE INTENDED TO SHOW THE PRINCIPAL CHARACTER-DEFINING FEATURES, NOT SPECIFIC COMPONENTS.

2. FOR A MATRIX OF SIGNIFICANCE RATINGS FOR INDIVIDUAL BUILDING COMPONENTS, REFER TO APPENDIX 1. "HISTORIC CHARACTER-DEFINING FEATURES".

CHARACTER-DEFINING SIGNIFICANCE DIAGRAMS LEGEND

- SIGNIFICANT FEATURE
- CONTRIBUTING FEATURE
- TERTIARY FEATURE
- NON-CONTRIBUTING FEATURE
- NEW CONSTRUCTION - PROPOSED

ARCHITECTURAL RESOURCES GROUP
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HISTORIC CHARACTER-DEFINING SIGNIFICANCE DIAGRAMS - ELEVATIONS

8 0 8 16
1/8" = 1'-0"

BUILDING 32
NASA Ames Research Center
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OCTOBER, 2007

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Building B-32 Reuse Guidelines

Appendix 4. Historic Aerial Photographs

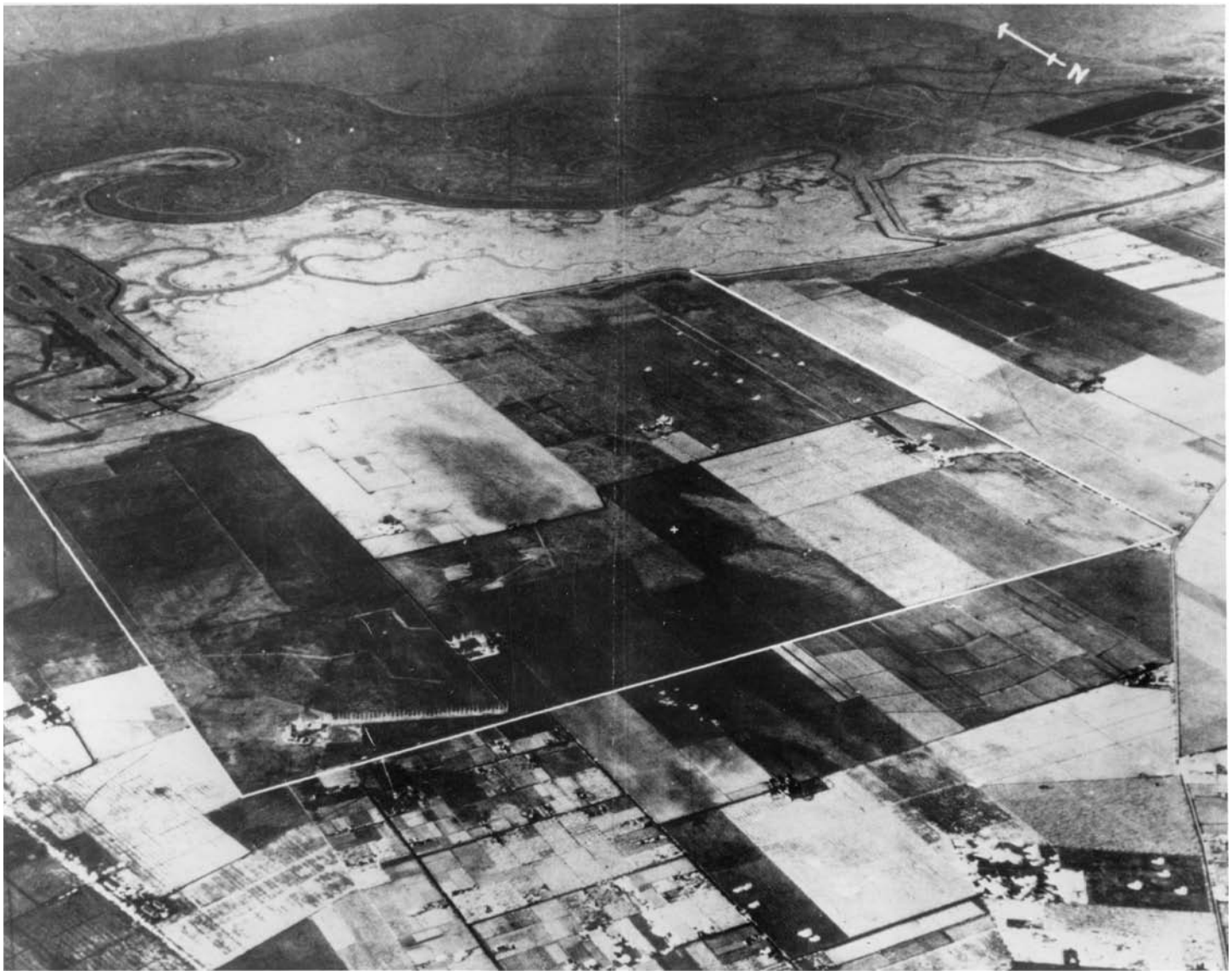

Figure 1: 1930 aerial photograph of future Moffett Field site.

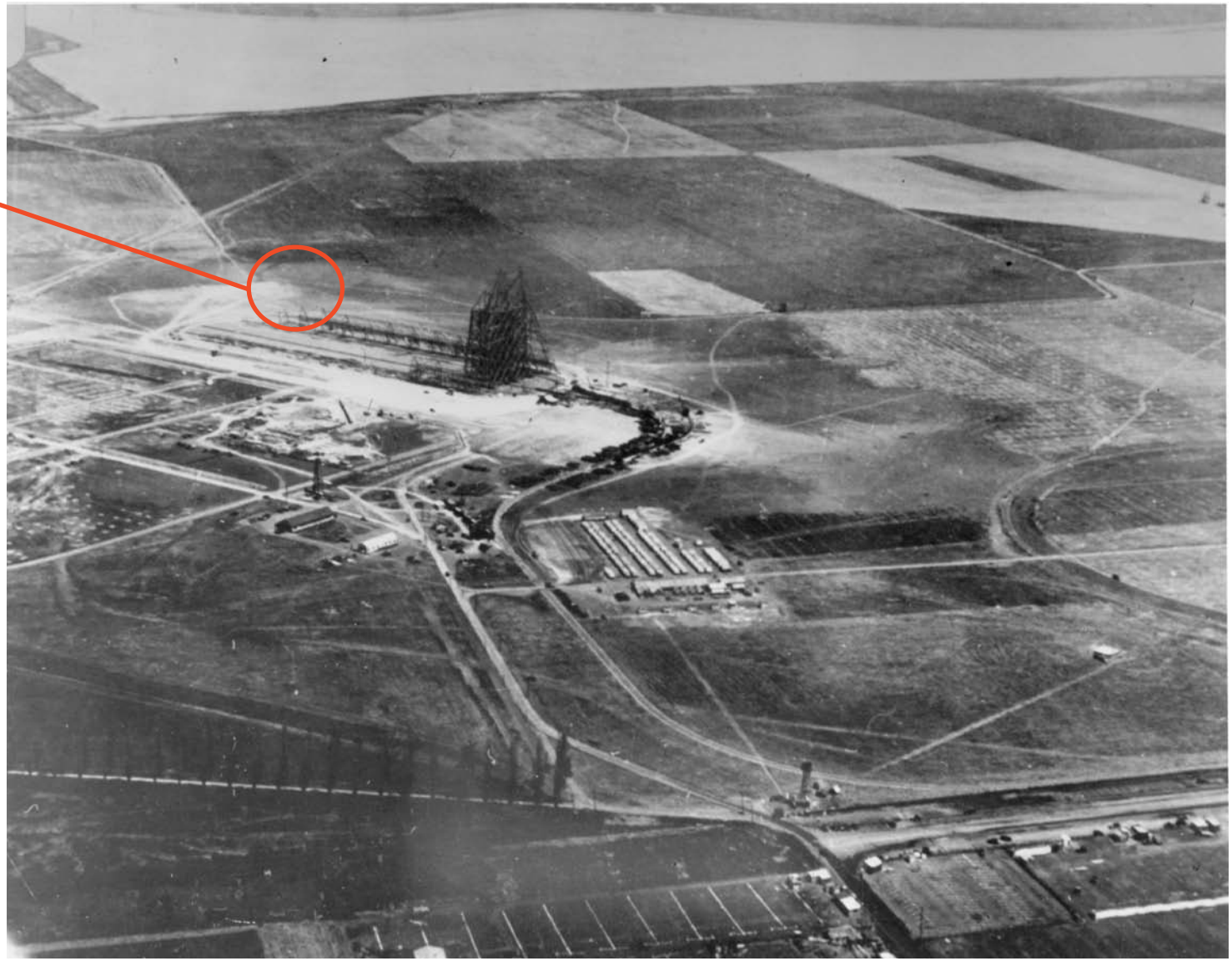

Figure 2: 1931 aerial photograph of Hangar 1 under construction.

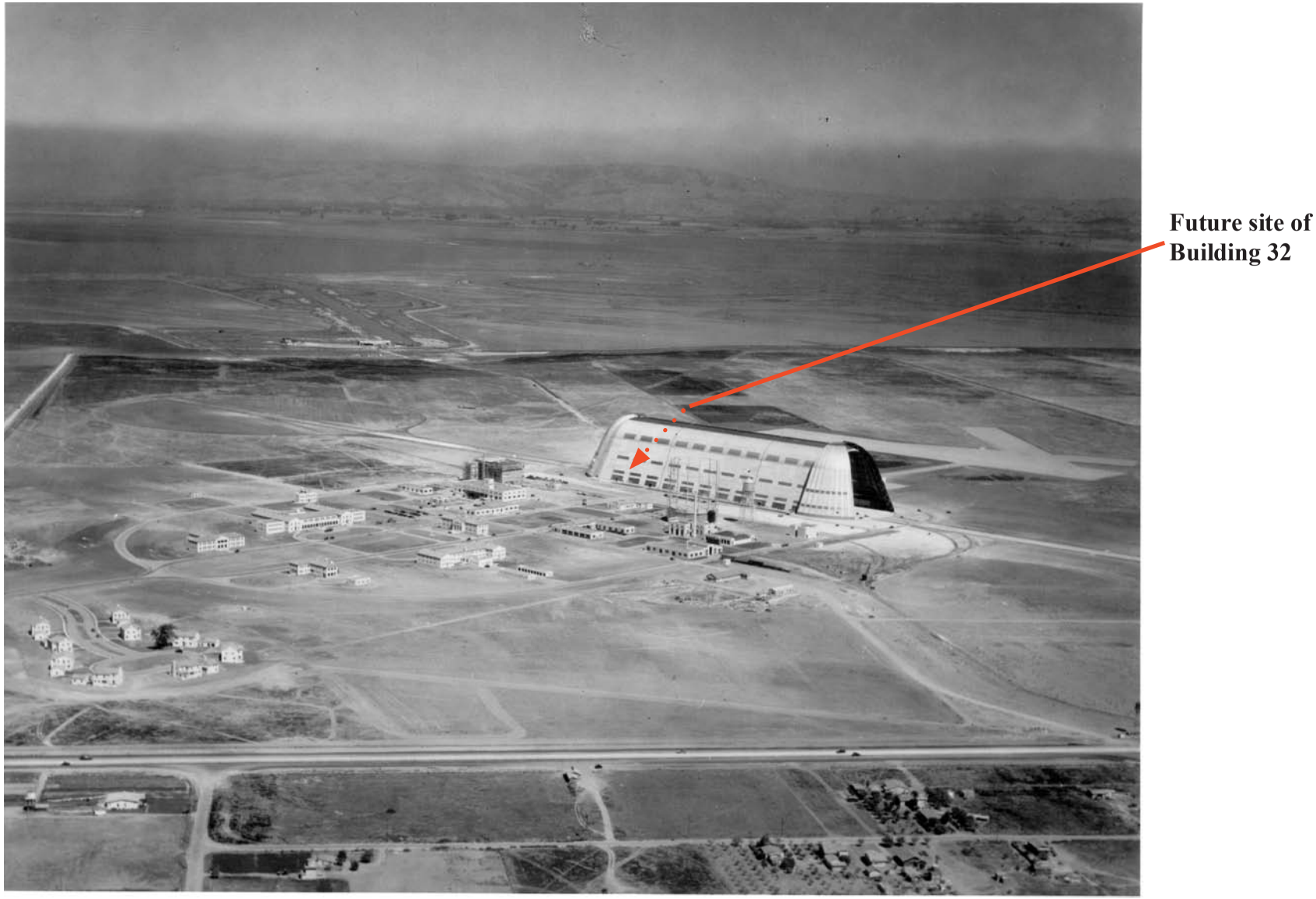

Figure 3: 1935 aerial photograph showing Shenandoah Plaza; future site of Building 32 behind Hangar.

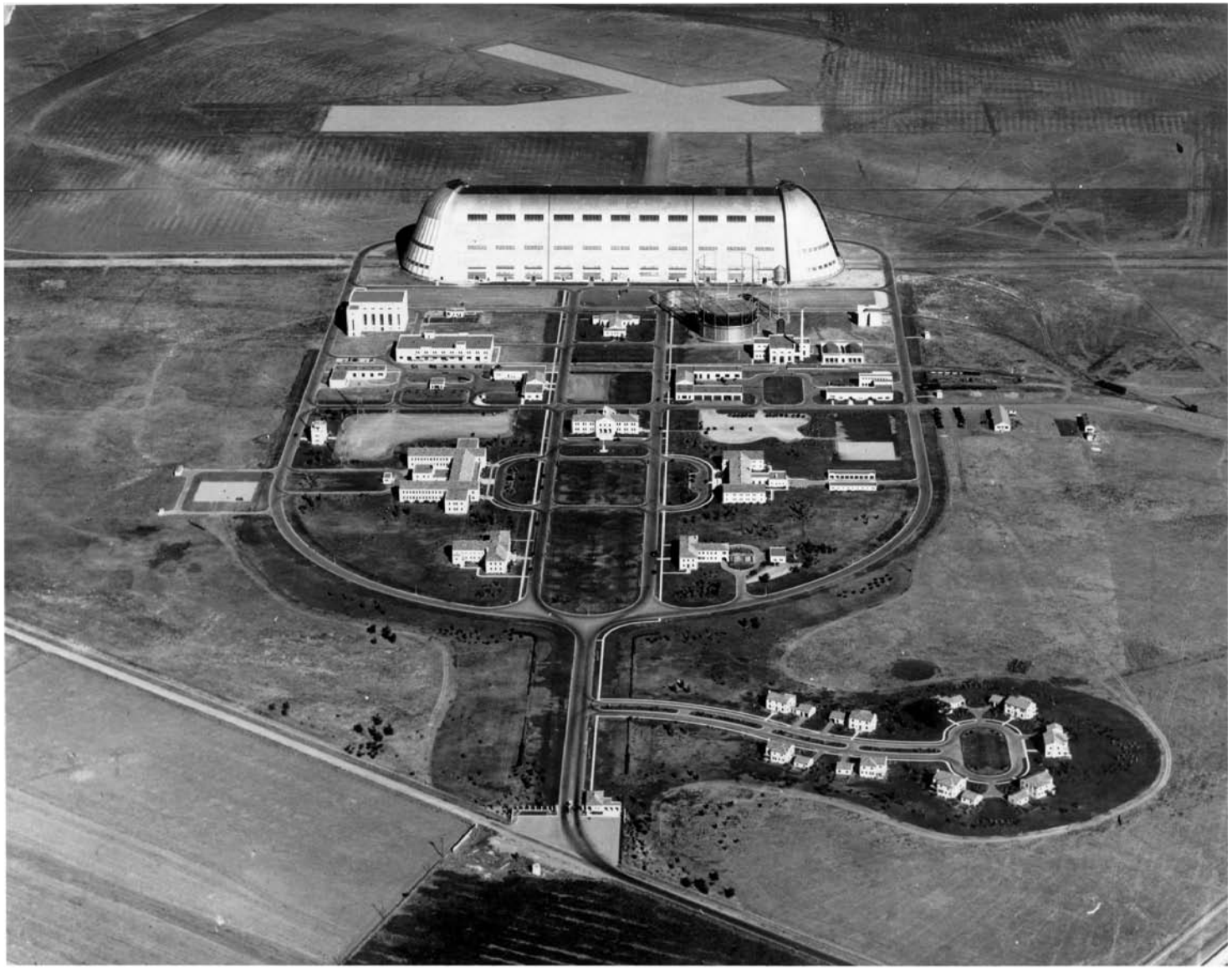

Figure 4: 1935 aerial photograph of Moffett Field.

Figure 5: 1936 aerial photograph of Moffett Field.

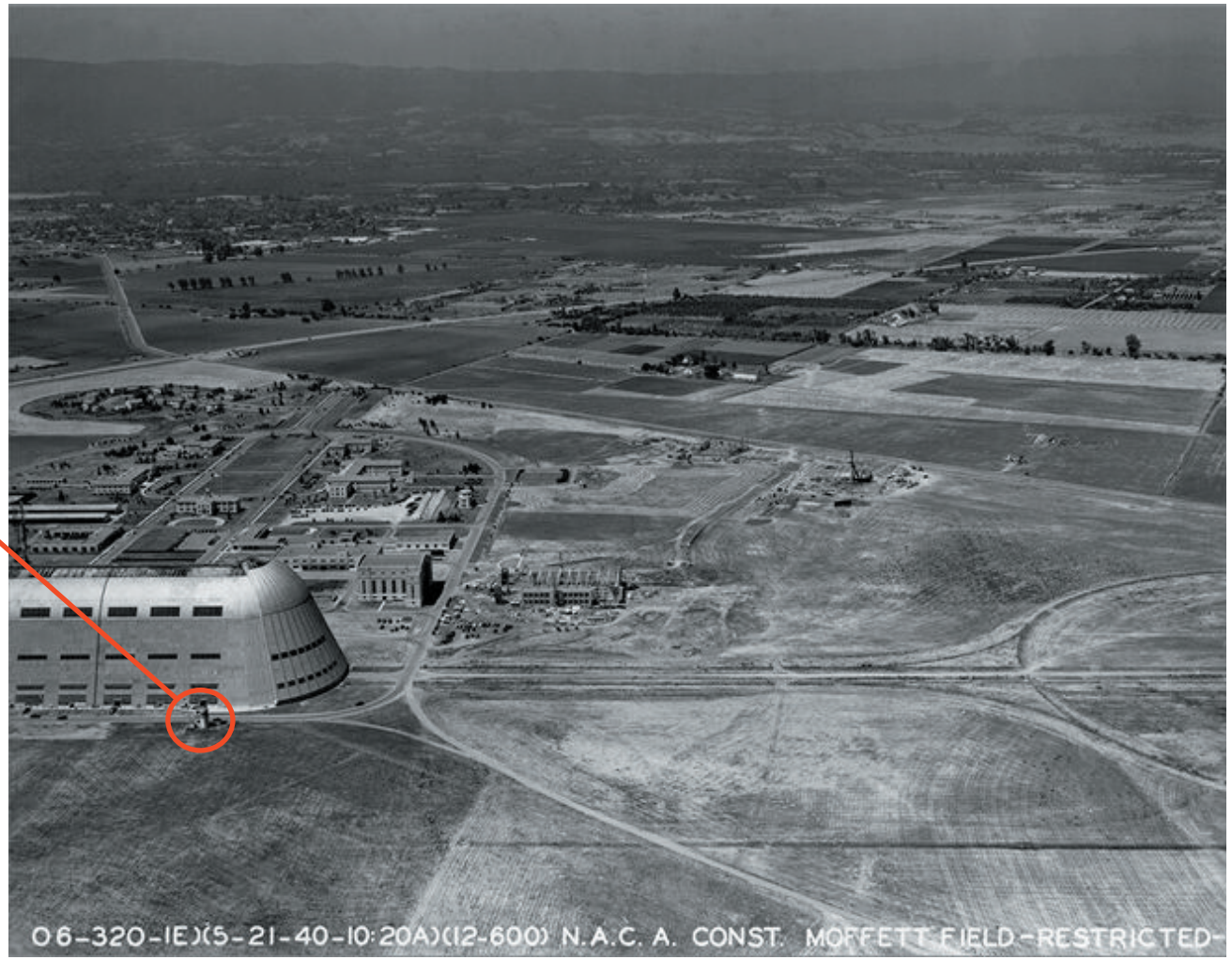

Figure 6: 1940 aerial photograph of Moffett Field, and Building 32 lower left.

Figure 7: 1943 aerial photograph of Moffett Field.

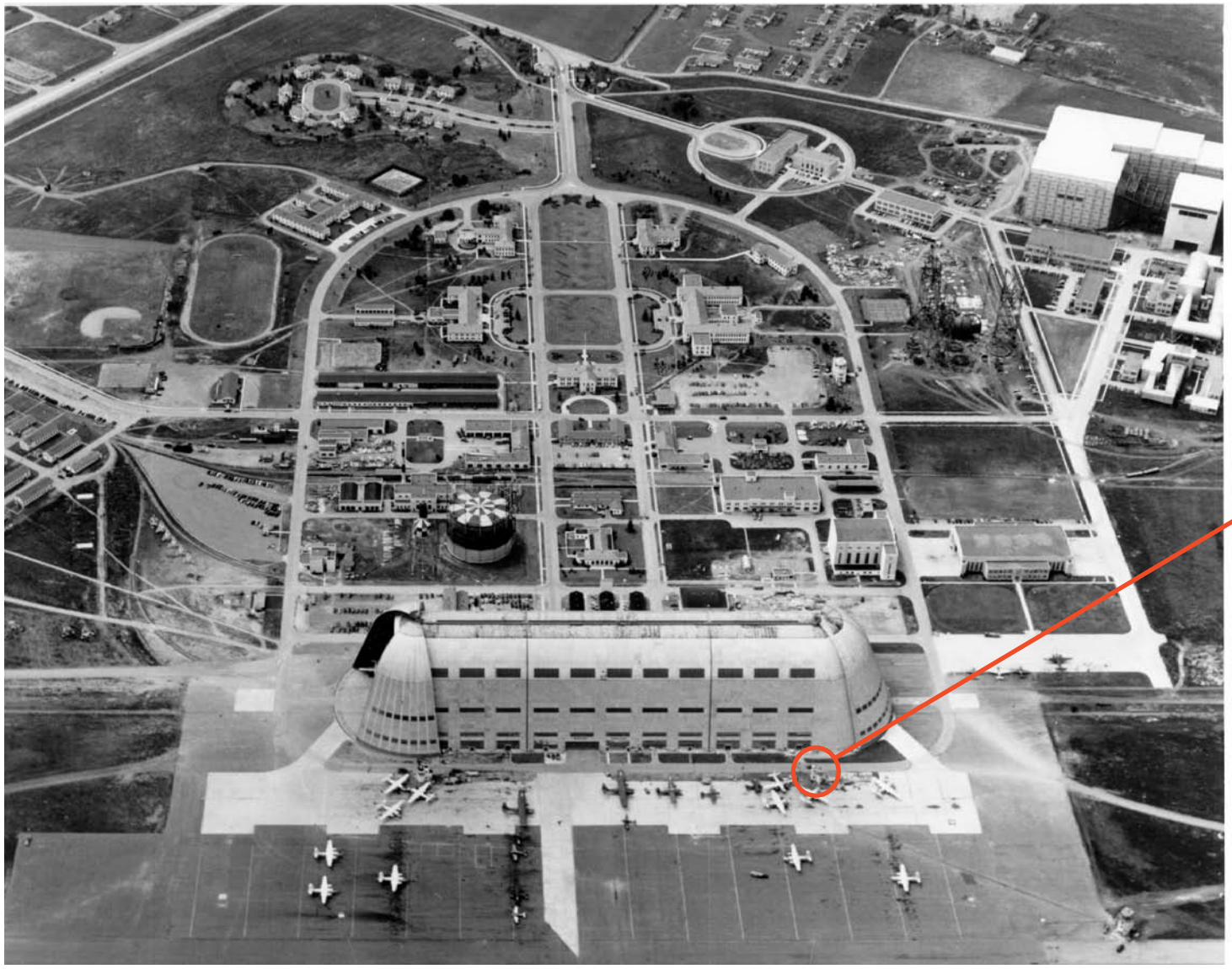

Figure 8: 1944 aerial photograph of Moffett Field.

Figure 9: 1982 aerial photograph.

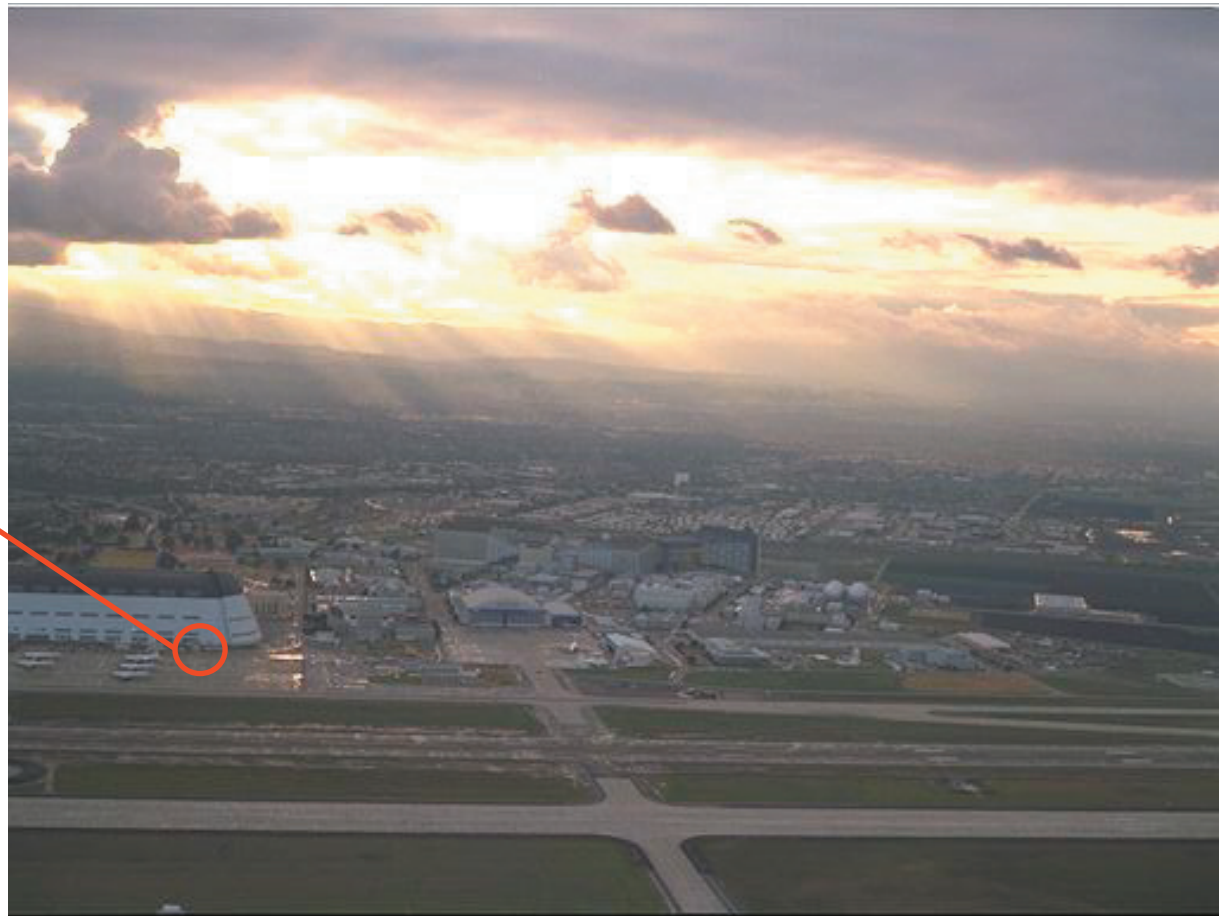

Figure 10: 1985 aerial photograph of Moffett Field, and Building 32 lower left.

NASA Ames Research Center
Building B-32 Reuse Guidelines

Appendix 5. Current Conditions Photographs (2006)

Figure 11. West/front façade

Figure 12. Building 32 south and west façades

Figure 13. South façade

Figure 14. South and east façades and Hangar 1 to the west

Figure 15. East façade, Hangar 1 in background

Figure 16. Roll-away door and ornamental copper bands at east façade

Figure 17. Original collection box and ornamental band (around round portion of Tower) at east façade

Figure 18: Northeast façade/Tower, with Hangar 1 to the west and Building 119 to the south

Figure 19. North façade, with hangar 1 to the west and Building 119 to the south

Figure 20. North and west façades

Figure 21. Entrance to Building 32 with plywood panel replacement door, concrete steps and high threshold

Figure 22. Entrance with boarded transom and original light fixture

Figure 23. First floor interior view of stairs

Figure 24. Wood ceiling/floor assembly and stairs to 2nd floor

Figure 25. Building 32 interior, stair base and railing in background

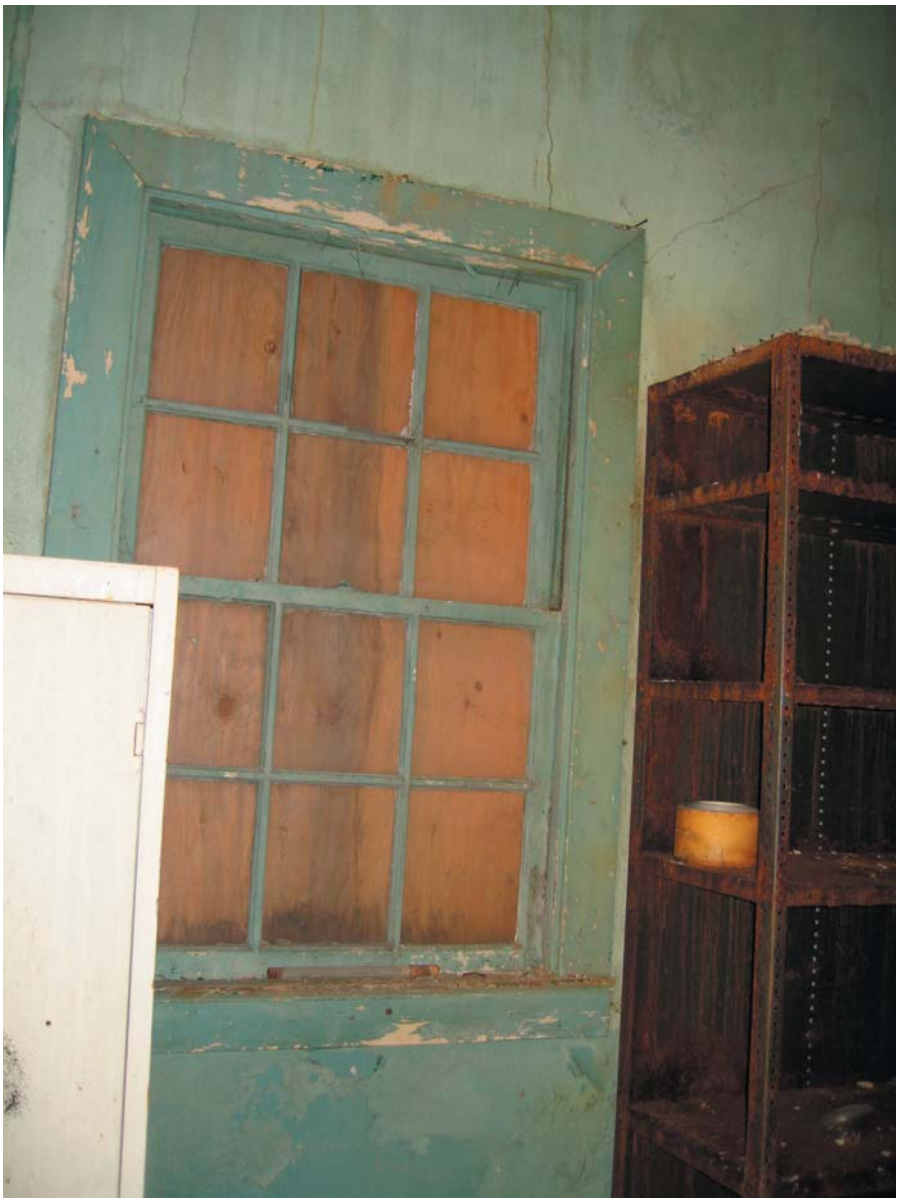

Figure 26. Interior view of original six-over-six sash wood window

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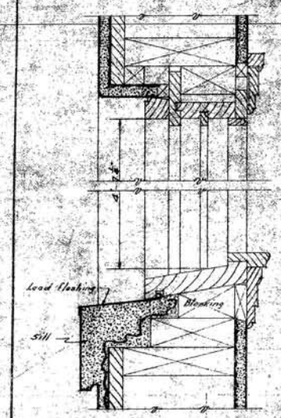
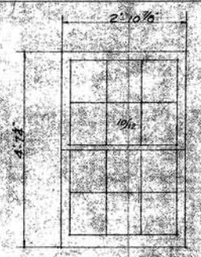
Building B-32 Reuse Guidelines

Appendix 6. Construction Plans

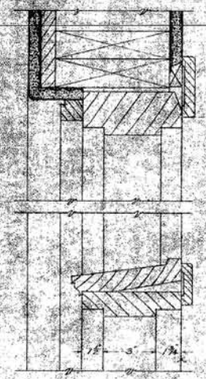
note: Documents research for Buildings 32 and 33 produced one sole sheet of construction drawings for Building 33. Due to the similarity in the original design of Buildings 32 and 33 (mirrored plans), we have included a copy of the document in the Building 32 report as well. In addition, please note that the sheet is mislabeled Building 32.



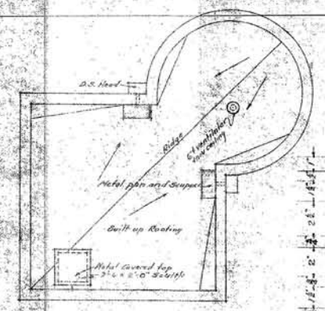


7 REQUIRED

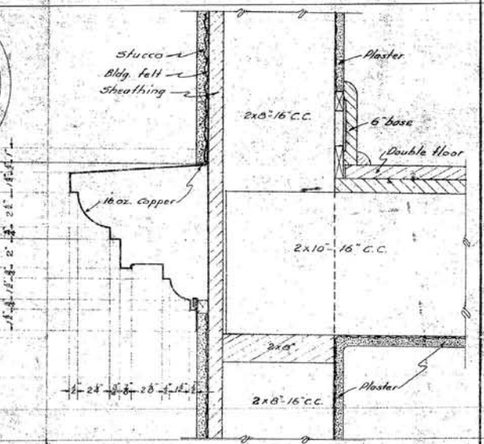
ELEV. AND SECT. OF WINDOWS
Scale 3"and ¾"-1'-0"



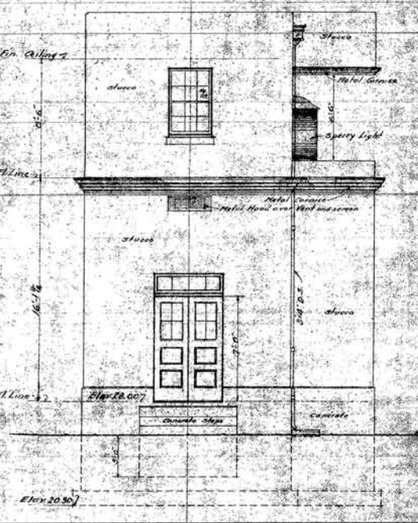
SECT. AT ENTRANCE DOOR



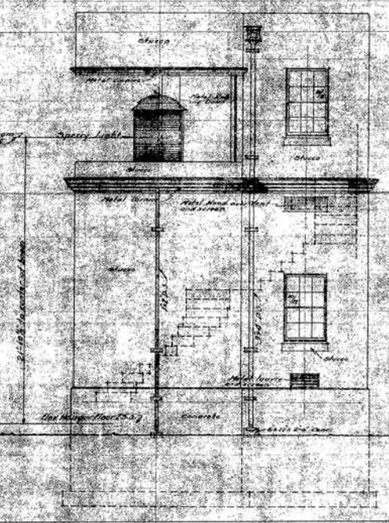
ROOF PLAN



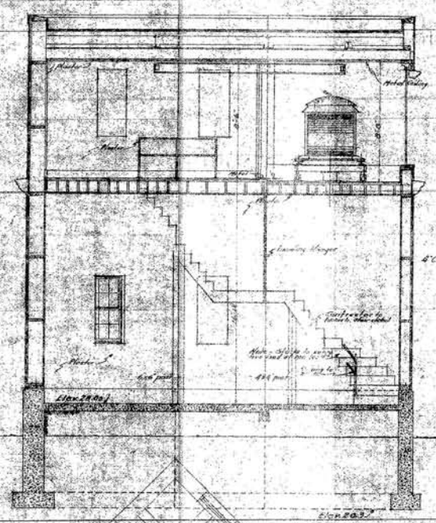
TYPICAL SECTION AT CORNICE
Scale 3"-1'-0"



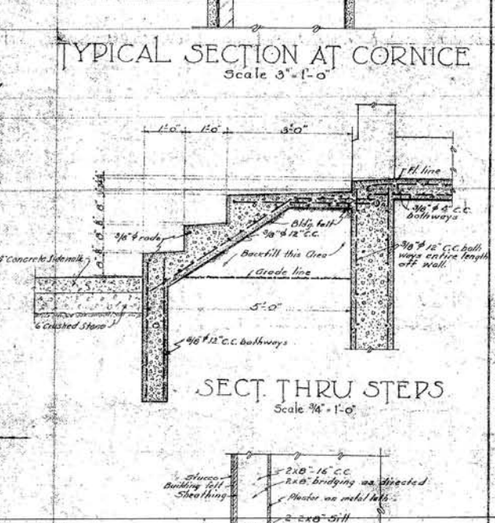
REAR ELEVATION



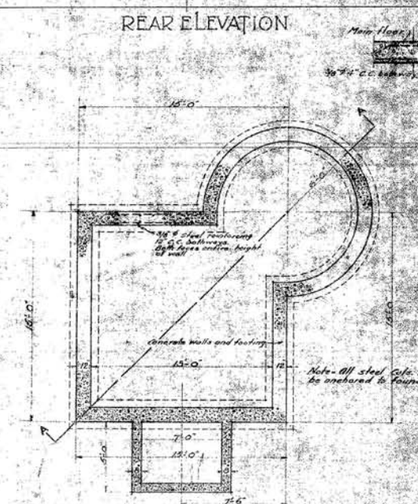
FRONT ELEVATION
Scale ¼"-1'-0"



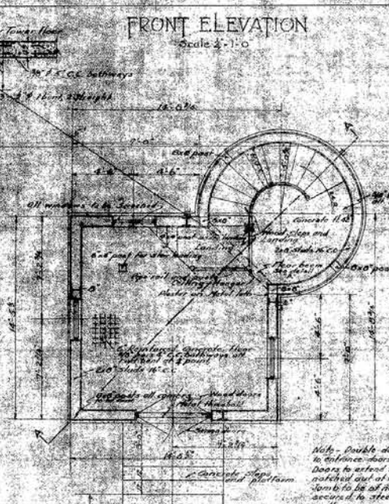
SECTION AA



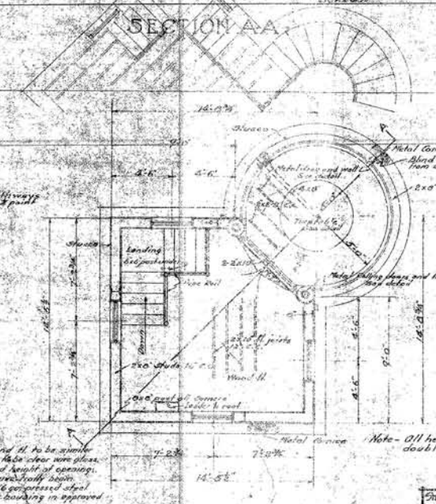
TYPICAL WALL SECT.
Scale ½"-1'-0"



FOUNDATION PLAN



FIRST FLOOR PLAN



SECOND FLOOR PLAN

SECT. THRU STEPS
Scale ¾"-1'-0"

Drawn by Uling	U.S. NAVAL AIR STATION-SUNNYVALE, CALIF.
Traced by	SERVICE AND HOUSING FACILITIES
Checked by H.H.T.	FOR FLOODLIGHTS FOR LANDING FIELDS
Chief Dftmn. H.H.T.	PLANS, ELEVATIONS AND DETAILS
In Charge FRH	
Y&D. Drawing No. 115386	Approved October 28, 1933
P.W. Drawing No. 149	E. L. Marshall
Sheet 1 of 8 Accompanying Specification No. 7850	Lt. Comdr. (C.E.C.) U.S.N. Public Works Officer
Scale as shown	

11-29-33 Sunnyvale. 1202.45-158

NASA Ames Research Center
Building B-32 Reuse Guidelines

Appendix 7. Moffett Field District Nomination

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY NAME: US Naval Air Station Sunnyvale, California, Historic District

MULTIPLE NAME:

STATE & COUNTY: CALIFORNIA, Santa Clara

DATE RECEIVED: 1/13/94 DATE OF PENDING LIST: 1/26/94
DATE OF 16TH DAY: 2/11/94 DATE OF 45TH DAY: 2/27/94
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 94000045

NOMINATOR: FEDERAL N/A Y

REASONS FOR REVIEW:

APPEAL:	N	DATA PROBLEM:	N	LANDSCAPE:	N	LESS THAN 50 YEARS:	N
OTHER:	Y	PDIL:	N	PERIOD:	N	PROGRAM UNAPPROVED:	N
REQUEST:	N	SAMPLE:	N	SLR DRAFT:	Y	NATIONAL:	Y

COMMENT WAIVER: N

✓ ACCEPT ___ RETURN ___ REJECT 2/24/94 DATE

ABSTRACT/SUMMARY COMMENTS:

The U.S. Naval Air Station Sunnyvale, California Historic District is eligible under NR criteria A and C in the areas of Military History, Architecture, and Engineering. The discontiguous district represents a rather unique and significant episode in the development of U.S. naval aviation prior to World War II. The Sunnyvale base was one of two Naval Air Stations built to port lighter-than-air dirigibles during the 1930s. Dirigible Hangar #1, the later blimp hangars #2 and #3, and their accompanying support buildings all represent excellent examples of early twentieth-century military planning, engineering, and construction.

The three enormous airship hangars represent significant engineering accomplishments and they are among a limited number of extant historic airship facilities in the United States. The core of the historic Naval Air Station--centered on a landscaped "common" and dominated by the looming airship hangars--remains largely intact and includes fine regional examples of Spanish Colonial Revival design.

RECOM./CRITERIA Accept A+C
REVIEWER Paul R. Lusignan
DISCIPLINE Historian
DATE 2/24/94

DOCUMENTATION see attached comments Y/N see attached SLR (Y)/N

SUPPLEMENTARY LISTING RECORD

NRIS Reference Number: 94000045 Date Listed: 2/24/94

US Naval Air Station Sunnyvale, California Historic District — Property Name
Santa Clara — County
CA — State

N/A — Multiple Name

This property is listed in the National Register of Historic Places in accordance with the attached nomination documentation subject to the following exceptions, exclusions, or amendments, notwithstanding the National Park Service certification included in the nomination documentation.

Signature of the Keeper

2.24.94
Date of Action

==========

Amended Items in Nomination:

Classification:
The number of previously listed resources is changed to zero (0); Hangar #1 was only determined eligible for listing.

Significance:
Area of Significance:
Architecture is added as an area of significance, defining the district as a good regional example of military design in the Spanish Colonial Revival style.

Significant Person:
The name of Adm. William Adger Moffett is removed from the significant person blank since the district was not nominated under Criterion B.

continued

SUPPLEMENTARY LISTING RECORD

NRIS Reference Number: 94000045 Date Listed: 2/24/94

US Naval Air Station Sunnyvale, California Historic District — Property Name
Santa Clara — County
CA — State

N/A — Multiple Name

==========

Amended Items in Nomination:

continued

U.T.M.:

The UTM coordinates are corrected to read:

A	10	582960	4140460
B	10	583240	4140880
C	10	583800	4141120
D	10	583940	4140740
E	10	583140	4140330
AA	10	584640	4141420
BB	10	584880	4141520
CC	10	584760	4141120
DD	10	584990	4141220

This information was confirmed with Navy FPO J. Bernard Murphy.

DISTRIBUTION:
National Register property file
Nominating Authority (without nomination attachment)

NPS Form 10-900
(Rev. 8-86)

OMB No. 1024-0018

RECEIVED

JAN 13 1994

NATIONAL REGISTER

RECEIVED

JUL 15 1993

OHP

84047

NPS-94000045-9999 ID AC

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property

historic name United States Naval Air Station Sunnyvale, California- Historic District

other names/site number U. S. Naval Air Station Moffett Field - Central Historic District

2. Location

street & number Central District ☐ not for publication

city, town Naval Air Station Moffett Field ☐ vicinity

state California code CA county Santa Clara code CA 085 zip code 94035

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property		
		Contributing	Noncontributing	
☐ private	☐ building(s)	40	54	buildings
☐ public-local	☒ district			sites
☐ public-State	☐ site	1		structures
☒ public-Federal	☐ structure	2		objects
	☐ object	43	54	Total

Name of related multiple property listing:

Number of contributing resources previously listed in the National Register 1

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this ☒ nomination ☐ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ☒ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

J. B. [signature] Murphy — Jan 5 /94

Signature of certifying official — Date

Department of the Navy Federal Preservation Officer

State or Federal agency and bureau

In my opinion, the property ☐ meets ☐ does not meet the National Register criteria. ☐ See continuation sheet.

Signature of commenting or other official — Date

State or Federal agency and bureau

5. National Park Service Certification

I, hereby, certify that this property is:

☒ entered in the National Register. [signature] 2.24.94

☐ See continuation sheet.

☐ determined eligible for the National Register. ☐ See continuation sheet.

☐ determined not eligible for the National Register.

☐ removed from the National Register.

☐ other, (explain:)

Signature of the Keeper — Date of Action

6. Function or Use

Historic Functions (enter categories from instructions)	Current Functions (enter categories from instructions)
Defense Naval Facility	Defense Naval Facility
Air Facility	Air Facility

7. Description

Architectural Classification (enter categories from instructions)	Materials (enter categories from instructions)
Late 19th and 20th Century Revivals	foundation concrete
Mission/Spanish Colonial Revival	walls stucco
Other: Dirigible Hangar	roof clay tile
WW II Blimp Hangar (2)	other terra cotta panels

Describe present and historic physical appearance.

SITE DEFINITION

The site consists of a large number of buildings that were constructed over an approximately 60 year time frame from the early 1930's until today. The buildings are clustered in a formal campus-like layout that is defined by a western-facing gated entrance and a very well tended landscape which includes mature specimen trees, shrubs, and manicured lawns.

The site can be easily divided into its stylistic components that also define the different eras of construction over the base's lifetime.

The oldest and most historically significant buildings, from an architectural and engineering standpoint that form a coherent core, include the formal cluster of buildings dating from 1933 that lead up to, and include, the imposing Hangar #1 (the original dirigible hangar) and WWII Blimp Hangars. This area of the base is bounded by Bushnell Road on the north, the automobile parking spaces behind Sayre Avenue on the east, Westcoat Road on the south; and the entry, Clark Road, on the west. The central area is laid out in an axial plan in a northeasterly direction with the original buildings symmetrically placed along a grand central greensward. In addition to this very defined central space where the earliest major base buildings are located, there is an equally significant adjunct of 9 officers' residences clustered around Berry Drive just to the south of the main gated entrance in another formally laid out plan with grass medians, a grass island at the end of the southern cul-de-sac, and a characteristically suburban curved residential street. In keeping with the symmetry that was so strong to the original plan, another unbuilt residential complex was originally planned for the northern side of the entrance drive.

These earliest buildings, which were designed by the Navy Department Bureau of Yards and Docks, exemplify California's most popular contemporary architectural style of the 1920's and early '30's. They are constructed in a late Spanish Colonial Revival architectural style (a style that was equally as popular in government construction in the eastern sections of the United States during the 1920's and into the early 1940's), as well as aspects that presage the modern designs of the Internationalist styles which would predominate in American architecture for the next thirty-five years (from approximately 1940 to 1975) .

[X] See continuation sheet

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties:

[X] nationally [ ] statewide [ ] locally

Applicable National Register Criteria [X] A [ ] B [X] C [ ] D

Criteria Considerations (Exceptions) [ ] A [ ] B [ ] C [ ] D [ ] E [ ] F [ ] G

Areas of Significance (enter categories from instructions)

Military
Engineering

Period of Significance

1930-1935
1942-1946

Significant Dates

Cultural Affiliation

Significant Person

Moffett, William Adger; Admiral

Architect/Builder

U.S. Navy Bureau of Yards and Docks

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

In the nation's quest to provide security for the lengthy expanse of it's coastlines the opportunity for air reconnaissance was realized by the futuristic Admiral William A. Moffett. Through his efforts, two Naval Air Stations were commissioned in the early 1930's to port the two U.S. Naval Airships (dirigibles) he believed capable of this challenge. The Naval Air Station Sunnyvale was the Pacific Coast location selected, designed and developed to port USS MACON (ZRS 5). The immense structure, Hangar #1, designed to house USS MACON, with its larger counterpart in Akron, Ohio, remain the two largest structures in the United States without internal support. At the onset of WWII, the base was expanded with Hangars #2 and #3 which were designed to accommodate the smaller blimps and balloons used for reconnaissance, until the range of heavier than air aircraft (airplanes) was sufficient to patrol the coast. The significance of the U.S. Naval Air Station Sunnyvale Historic District is attributed to the association with the expanding defense capabilities of the U.S. Navy, the engineering technology found in lighter than air ships, the design of the hangar and system for porting the dirigible and in the plan and architectural style of the station designed to support this defense technology. The significance of Hangar #1, was recognized when it was designated a Naval Historical Monument. It has been designated a Califronia Historic Civil Engineering Landmark, by the San Francisco section, American Society of Civil Engineers, and has been determined eligible for listing in the National Register of Historic Places by the U.S. Navy in consultation with the California State Historic Preservation Officer. The entire historic district is supported for listing in the National Register of Historic Places at the national level of significance under Criterion A for the association with coastal defense and naval technology that has made a significant contribution to the broad patterns of our history; and Criterion C reflecting the distinctive type, period, method of construction and high artistic values that are represented in the 1933 station plan and buildings. In 1942, the station was recommissioned, U. S. Naval Air Station, Moffett Field, in recognition of the significant contribution to naval history by Admiral Moffett, contributions that have gained him the unofficial title, "Father of Naval Aviation."

[X] See continuation sheet

9. Major Bibliographical References

Gragg, Dan The Guide to Military Installations, Harisburg, PA; Stackpole Books, 1983
Payne, Stephen M., Santa Clara County: Harvest of Change, Santa Clara,CA;Windsor Publica 1987

Unpublished:

Histoirc Civil Engineering Landmarks of San Francisco and Northern California, 125th Annual Conference, American Society of Civil Engineers, San Francisco Section, Sponsor, 1977.

Ifft, Jerry. The Era of Dirigibles at Moffett Field, 1987; California Room, Martin Luthe King, Jr. Memorial Library, San Jose, CA

Interviews:

Benjamin Mandweiler, NAS, Moffett Field, Public Works Department
Lt. Col. Robert N. Maupin, USAF. Ret.

☐ See continuation sheet

Previous documentation on file (NPS):
- ☐ preliminary determination of individual listing (36 CFR 67) has been requested
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☐ recorded by Historic American Buildings Survey # _____
- ☐ recorded by Historic American Engineering Record # _____

Primary location of additional data:
- ☐ State historic preservation office
- ☐ Other State agency
- ☒ Federal agency
- ☐ Local government
- ☐ University
- ☐ Other

Specify repository: _____

10. Geographical Data

Acreage of property 124 Acres (approximately)

UTM References

	Zone	Easting	Northing
A	10	377036	1220598
B	10	376975	1220604
C	10	376999	1220625
D	10	377063	1220530

☒ See continuation sheet

Verbal Boundary Description

The Naval Air Station Sunnyvale includes all of the 1933 original base plan with the addition of the 22.5 acre detached area containing hangars #2 and #3. The boundary line begins at the Main Gate, including the entrance gate and fence, proceeds along Clark Road to Berry Road where the boundary turns south to encircle the quarters A through H, north behind quarter F to Westcoat Road, east to Sayre Ave., north to Bushnell Road and west to Clark Road. A detached area is included in the historic district to incorporate hangars #2 and #3 with a 25 foot band of land around the pair.

Boundary Justification

The boundary includes the limits of development in the 1933 base plan for the Naval Air Station Sunnyvale, as prepared by the Navy Department, Bureau of Yards and Docks, and the area incorporating hangars #2 and #3 that are associated with lighter than air military aircraft.

☐ See continuation sheet

11. Form Prepared By

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This hybrid style forms a unifying element that not only holds the myriad of architectural uses together, but gives the entire complex a very satisfying central theme. The style is highly ornamented in the most significant buildings (such as the Administration and Bachelor Officers' Quarters) and stripped of ornament, but no less supportive of the whole in the smaller out buildings and garages. Interestingly, the building that is the raison d'etre of the entire Naval Air Station, Hangar #1, eschews any historicism in its design, but rather reflects the highest Streamline Moderne forms of modern technology at its finest.

Another slightly newer cluster of buildings is also defined by their distinctive architectural style which reflects the most popular designs of their time. These buildings are those structures which were built in the 1940's and early '50's and that are designed in a very plain International style of architecture defined by the simple stripped geometrical forms of the structures. These interesting examples are located at a few scattered sites within the original plat noted above (i.e. the Post Office, #67, for example), as well as being set in a long row along Dailey Road between the original campus plan and the Bayshore Freeway (#152). Other noteworthy buildings include the Control Tower (#158) at the far eastern edge of the site and the original Chapel Building (#86), which is a reinterpreted hybrid style that exhibits aspects of both a stripped Spanish Colonial Revival design and ornament hinting at more of a Mission Revival style. Additionally, two slightly smaller, but no less impressive hangars (Hangar #2 and #3), were constructed across the runways to the east of Hangar #1. These buildings were designed for the smaller blimps that replaced the huge rigid framed dirigibles of the 1930's for which Hangar #1 was designed. They also were designed in a much more prosaic and conventional architectural style than the metal sheathed futuristic Hangar #1.

A building that provides visual compatibility with the 1930's Spanish Colonial Revival buildings is the Chapel. This is due both to its physical location within the historic district, as well as to its architectural design, which is much more compatible with the older buildings on the base rather than the later International styled buildings. Early photos of the building illustrate a structure whose basic form of rather simply pitched cruciform plan appears to be very standard designed archetype military base chapel of the 1940's. But to this basic form, the designers add very site specific detailing which, though not technically a re-creation of the Spanish Colonial Revivals around it, very handsomely picks up hints of the building characteristics of the older structures. These details include, most importantly, the cupola which mimics the tower on the Administration Building, and the projecting curvilinear portico with its stone-like entry frame which takes directly from the Spanish Colonial Revival interpretations surrounding. The end result is an almost textbook example of a successfully designed new structure sensitive to an established architectural campus. Because the chapel was constructed well after the 1933 period it is not a contributing building to the historic district.

Because the International style buildings are less than 50 years old and are not individually exceptional, they will not qualify for listing in the National Register at this time and will not be discussed in any detail. This group consists of buildings 148-156, 158 and building 67.

In addition to these two major stylistic groupings, there are a number of other buildings on the site that have been constructed over the past approximately 50 years that fill up the site, but do not represent very fine examples of architectural design. These buildings are characterized by their utilitarian function, such as the number of Quonset huts (#111, #118 and #119) found throughout the site, as well as the plethora of small wooden and stucco buildings with little discernible styling that comprise much of the barracks, enlisted housing, shopping and warehousing spaces (#E-52, #E-13, #E-29, #347, #223, #245, and #244).

Thus from a specific design standpoint, the site can be divided into the following five main components that comprise its strongest identifying features:

A. Original Spanish Colonial Revival Design
B. Significant Engineering Features (Hangars #1,#2,&#3)
C. Miscellaneous Supportive Design Features
D. Post 1935 buildings designed in the Spanish Colonial Revival Style
E. International Style Buildings from the 40's

Out of these five categories, the proposed historic district from the 1930's will include all those features identified with item "A, B & C" immediately above.

A. ARCHITECTURAL DESCRIPTION OF THE SPANISH COLONIAL REVIVAL-DESIGNED ORIGINAL BASE BUILDINGS.

The original plan of Moffett Field was constructed in an architectural style that had as its antecedent the exuberant and capricious ornamentation applied by the 17th Century architect, Jose Churriguere, and eloquently revived by Bertram Goodhue in the design for the 1915 San Diego Panama Pacific Exposition. The Navy first attempted the style at Chollas Heights Radio Transmission Station in 1916 and followed with Goodhues' Marine Corps Recruit Depot, c. 1920, Naval Air Station North Island, c.1921, and his sketches for the Naval Training Center in San Diego, a year or so later. This form of Spanish Colonial Revival design reached its zenith at the end of the 1920's and was gradually losing favor to the modern designs of the mid-to-late 1930's. By the 1940's only some very late examples, usually transitional in styling that reflected the rise of both modern schools of architecture (Moderne and Deco styles, as well as the later International or Bauhaus-influenced styles) were being built.

The complex of original buildings that comprise the heart of the Naval Air Station Moffett Field are examples of late Spanish Colonial Revival design reflecting a much more severe example of this style with strong influences of the more modern style precepts, as well as hints of Eastern Colonial designs. The resulting hybrid significantly alters the original architecture of this style.

These buildings are characterized as essentially two-storied white or off-white stucco structures that are capped by very low-pitched Spanish tile roofs, which are punctuated by projecting chimneys, air ducts and, in the case of the true centerpiece building, the Administrative Building (#17), a richly ornamented, roof pavilion where corner columns support a decorated dome. The buildings are all rectangular in plan with either central projecting spaces or corner wings. Wall surfaces are very plain with the major break up of space occurring either in the location of rectangular-shaped windows, slightly projecting stringcourses between the floors, round arched entryways or arcaded ornamentation styled to look like granite around the major entry doors and surrounding significant window spaces.

It is the variation of the above major design elements that define the original base architecture. The two most handsome entrances are the round arched arcades that distinguish both the aforementioned Administration Building and the equally impressive Bachelor Officers' Quarters (#20). Repeated ornamentation include the flattened urn motif, various cartouches, and quarter-foil windows found along the exterior surfaces of all the major structures. The juxtaposition between the flat surfaces of the exteriors contrasting with the florid ornament around the major doors and windows provide the perfect tension that distinguishes the Spanish Colonial Revival style. A notable somewhat stripped example of this style is the impressive original Aircraft Tower (#18).

Some of the minor out-buildings, although stripped of much ornamentation, exhibit sensitive design features such as the low stepped parapets of buildings #22 and #2, the repeated multilight apertures of #10, and the simple, yet distinctive massing of the original portions of #6, which acts to reinforce the common design theme throughout the historic core. All of these original outbuildings significantly reinforce the common design theme of the historic campus.

The second cluster of original buildings, which forms an equally impressive uniform design statement, is found in the earliest residential units of the detached officers housing. In this extremely pleasant space, made so by its luxuriant landscaping and large unbroken lawns, a very simple house plan is repeated with only slight variations. The structures are designed in a very stripped and somewhat severe Spanish Colonial Revival style with two-storied, rectangular plan residences joined to a garage, either a one or two storied garage, by an arcade. The roof lines are low pitched gables that are sheathed in red Spanish tiles and punctuated by end fireplaces. Apertures are symmetrically placed on the structures with the dominant design characteristically reserved for the front entry. Windows are generally rectangular in shape, double hung and 3 over 2 in design. As with the major buildings on the working base section, here two stringcourses and various door surrounds provide the major contrast to the very simple stucco walls. Additionally, a similarly designed structure forms a prominent security building at the front gateway.

B. DESCRIPTION OF THE ORIGINAL ENGINEERING FEATURES (HANGARS #1, #2, AND #3)

Completely separate in design, but of such striking style and size as to warrant separate discussion are the three buildings that form the raison d'etre of the entire complex. The three hangars are of such proportions that for this reason alone they warrant the title "landmark". Aesthetically, the original hangar, which was constructed to hold USS MACON, a dirigible, is of such a unique design that it stands apart even from its later sister buildings. Hangar #1 is a metal sheathed behemoth whose rounded shape is both the epitome of the aerodynamically influenced Streamline Moderne style as well as a stylistic cousin to the huge airship that originally berthed inside the mammoth hangar.

Above all other buildings found on the Moffett Field site, Hangar #1 is without question the most significant building both architecturally and historically. It is one of the major buildings of Northern California, and has been recognized as an Engineering Landmark by the American Society of Civil Engineers.

Hangars #2 and #3 are significant more for their size than their unique styling or design. They represent more prosaic attempts at constructing very large military hangars. Similarly designed structures are found on Marine Corps Air Station, Tustin, California and at Coos Bay, Oregon. The more common design does not, however, detract from the sheer magnitude of the two huge buildings side by side. Along with Hangar #1, these two buildings help define the south San Francisco Bay Area from all distant directions.

C. DESCRIPTION OF THE OTHER SUPPORTIVE DESIGN ELEMENTS (I.E. LANDSCAPING, GATEWAYS, ARTWORK AND ITEMS OF INTEREST IN THE LANDSCAPE, STREET LIGHTING, AND SIGNAGE)

The third and final group of elements add immeasurably to the quality of design cohesion that characterizes the Naval Air Station Moffett Field site. These elements support the physical layout of the site plan as well as the quality of the original historical architecture. They also help define the campus-like quality of the base as well as unify the disparate building styles and types.

Most prominent of these supportive elements is the landscaping. The ubiquitous mature trees, the huge green spaces, and the careful placement of plants and shrubs which add immeasurably to the mise-en-scene. The luxuriant and well tended landscape is the first feature which one experiences after passing through the entry gate. Early photos of the site show a very desolate natural landscape which was essentially bay lowlands. Blueprint plans from April 29, 1933 illustrate the importance that a unifying and coordinating landscaping plan for the air station had in forming the basis for today's superlative luxuriant landscape. There could be no doubt that the existing grounds could not have been produced without a well conceived original plan.

Of almost equal importance in differentiating the site from its surroundings is the entry wall and gate itself (#36). Although very restrained in design, the gate forms a physical entrance into the unique area from the very bland surrounds. It should be noted that the wall, gateway, and gatehouse all derive from the original base architectural design plan.

Street furniture, interesting items on the landscape, and street lighting also add to the unique quality of the site. The furniture includes a detached community message board, a sundial and an historic anchor, both in front of building #25, as well as within the central greensward. The street lighting still retains its original bases, but the lamps themselves, from a later '50's design, are somewhat inconsistent with the Spanish Colonial Revival buildings of the historic core. Replacement with a more original form should be encouraged.

Signage too helps add to the unifying elements of the site. It is, most prominently in the historic core, understated in blue with gold lettering which is very supportive of original high design standards. Such attention to detail should also be encouraged to continue. For it is in the sum of all of these disparate features that the whole of a unique and memorable built environment results .

INDIVIDUAL SITE DESCRIPTIONS:

The following descriptions define the special design characteristics that distinguish the architecturally significant buildings from the 1933 plan (with two notable exceptions being a description of the 1943 designed Hangars #2 and #3).

HANGAR # 1: BUILDING #1 NPS-94000045-0001 ID

The site consists of a very large (1140'x308'x194') single-story, dirigible hangar that is constructed with three hinged steel truss arches and "X" cross bracing that is sheathed in large metal plates and set on a huge rectangular-oriented, elliptical shaped, floor plan and designed in a slightly flattened parabolic form. The structure further exhibits four rows of very large rectangularshaped and horizontally-oriented window bands along its two dominating eastern and western facing flanks. These apertures appear flush with the immense metallic skin of the building and greatly add to the very futuristic aerodynamic effect of the design.

Of particular engineering note are the hangar doors that run the full height of both the north and south-facing elevations. These doors are retractable and form a halfdome shape when closed.

The building exhibits a very clean, Streamline Moderne design which perfectly mimics the form of the airships themselves. Located perpendicular to the axis of the station plan this dominate structure provides the focus of the 1933 station plan.

The mammoth structure designed to hold fully inflated giant dirigible airships from the 1930's military fleet (such as USS MACON) was actually constructed in 1932 preceding the buildings of the surrounding base which date from 1933. The structure is important due to its unique use (dirigible hangar), beautifully executed Streamline Moderne architectural design, ingenious

engineering construction; and for its very size that still dominates a greatly urbanized Santa Clara County in the 1990's. From all aspects of national landmark status criteria, this building qualifies on its own. When added within the context of the surrounding supporting campus plan, the entire ensemble forms a very unique sense of place within the built environment and continues to exhibit national prominence.

115585 115587
HANGAR #2 AND #3: BUILDINGS #46 AND #47 -0038 -0039 ID

The site consists of twin hangars that were designed for the, blimp fleet during WWII. They are of treated California redwood frame construction, configured on a rectangular plan in a more flattened parabolic form than Hangar #1; and characterized by their immense, moderately pitched porticoes at each of the north and south-facing hangar doors. These dominating entries are supported by very large concrete piers at each of the four corners. The twin buildings are set on a site plan that is directly oriented with the earlier Hangar #1, which is due west. The scale of the structure is exemplified by their dimensions, which at 1,075'x297'x171' (180,518 sq. ft.) make them slightly smaller than their predecessor, but still very impressive on the landscape. The use of wood construction instead of a steel truss system was in response to the war effort. Like most west coast military facilities constructed after 1941, metal was used very sparingly to conserve the resource for use in constructing ships and armament.

The design of these two buildings is in a much more conservative architectural style than the futuristic form of Hangar #1. These later hangars are almost domestic in their gabled porticoes. They definitely lack the daring and ingenuity of the other hangar's form and they are much less a unique design to the area. In fact, four other structures of like design were built on the west coast during World War II, to house the blimps used to patrol the Pacific coastal waters of the United States. Two in Coos Bay, Oregon which are no longer owned by the Federal Government and two on what is now Marine Corps Air Station, Tustin in Southern California. All four of these structures have been nominated to the National Register.

Although not of equal architectural or design merit as Hangar #1, these two like-structures are significant from both an historic perspective (as excellent extant examples of WWII blimp hangars) as well as an architectural/engineering perspective (they are after all buildings of incredible size and stature upon the landscape). The twin structures further add to the important design whole of the best of the original 1933 plan and the just slightly less impressive structures from the 1940's which help in-fill much of the site. They were completed in 1943. The combined visual power of Hangars #1, #2, and #3 form a physical presence upon the urbanscape which still dominates the low horizontal design of the Santa Clara Valley.

115554 NPS - 94000045 - 0007 ID

ADMINISTRATION BUILDING: BUILDING # 17

The site consists of a two-story structure that is constructed on a shallow cruciform rectangular floor plan which is built of wood and sheathed in stucco with red Spanish tile roofing and terra cotta ornamentation, especially notable in the window and door surrounds. The building is the most prominently sited structure within the 1933 campus plan. It is set in the very heart of the open grassy median as a definite center point to the original plan. Its architectural design represents a late example of Spanish Colonial Revival style with some modifications that give it a kinship with Eastern military bases of the same vintage (that were designed in dry formal interpretations of Colonial Revival).

The building is 148'x41 'x37' and contains 18,954 sq. ft. The structure is characterized by the features which define all of the original buildings: the very low pitched, slightly hipped and tiled roofline. Exterior walls are flat and devoid of ornament, save a stringcourse running the entire perimeter of the building and separating the two stories. The eave line is very shallow. Windows are simple, rectangular in plan, vertical in orientation, multi-paned and double hung. Overscaled terra cotta ornamentation define the major front and back entrances, as well as the centered second story window. The main or west-facing entrance projects out from the main structure and exhibits a triple round-arched, recessed entrance.

Ornamental urns, pilasters and floral design (characteristic of Churrigueresque Spanish architecture of the 1 7th Century) add a much needed ornamental counterpoint to the very simple and severe basic design.

A further feature which distinguishes this structure among all of the others in the original campus plan is the small centered Bell Tower. This small belvedere is capped by a diminutive, red-colored dome and distinguished by very flat arches at each of its four faces. This architectural style is much more characteristic of the colonial designs of the Eastern United States and is a major factor in classifying the overall base design as a modified Spanish Colonial Revival style.

With the nearby Bachelor Officers Quarters and the Married Officers' Residencies, the Administration Building, (which is also historically referred to as the Admirals Quarters) is the most architecturally important building from the original 1933 construction (excluding Hangar #1). This building sets the design criteria that is followed throughout the original campus plan. It acts both as a handsome example of hybrid revivalist architecture which is prominently set at the most important axial juncture of the site and as one of the most lavishly ornamented of Moffett Field's original structures. As such, the Administration Building is a key to the historic fabric of the site.

115557 NPS-94000045-0010 1D

BACHELOR OFFICERS QUARTERS: BUILDING #20

The site consists of a large, two-storied structure that was constructed on an irregular rectangular shaped site plan which is actually symmetrical in form. The building exhibits a more ornamented interpretation of a hybrid Spanish Colonial Revival architectural design. It is characterized by the same basic features that distinguish all of the original buildings. The roofline is lowpitched and sheathed in red Spanish tile, the eave is fairly shallow, wall surfaces are unadorned white stucco; and window shapes are paired rectangular forms which are double hung, 3 over 2 in form. Major entrances are distinguished by terra cotta facing that emulates granite. Three large round arches provide the building with a very elegant entryway. Flat unadorned pilasters separate these arches. They are further adorned with flat urn detailing. The characteristic stringcourse separates the two floors. A rear wing projects toward the south.

The structure is sited symmetrically across from the equally prominent, but slightly less architecturally impressive, Bachelor Enlisted Quarters (#19) which has been greatly enlarged with a rather bland International Style addition at both ends. The structure is further enhanced by a well conceived and equally well maintained landscape plan.

Along with the cluster of major buildings that are set along the formal axis of North and South Akron Roads, the BOQ helps define the high quality design character that distinguishes the historic core of Moffett Field. The structure is an extremely fine example of historicist architecture of the 1930's and remains a key element in the cohesion of the base's physical form.

115549
GYMNASIUM: BUILDING #2 NPS-94000045-0002 1D

The site consists of a very large, single-story, plaster-sheathed, steel framed building that is constructed on a slightly irregular rectangular floor plan with a flat roof that is distinguished by slightly projecting stepped parapets that hint at the utilitarian designs of the original campus plan of 1933. the roof is wood sheathing on steel beams. This structure exhibits a ubiquitous projecting stringcourse encircling the building, as well as the very plain beige plaster walls. The major design feature on this essentially utilitarian structure is in the window placement. Here, the structure is characterized by very tall, horizontally-banded, multi-paned apertures which act to break up the surface of the exterior walls either as centered indentations on large expansions of plaster or as repeated forms which act almost like columns along the major side elevations.

This structure avoids, as do all of the original functional outbuildings, the Spanish Colonial Revival design of the major living areas of the base. Interestingly, it provides a handsome architectural bridge between the very futuristic Streamline Moderne design of Hangar #1 and the more historicist styles of the original campus plan.

The site is significant both historically and architecturally. It was originally constructed to be a balloon hangar which justifies its extremely large interior single story space (19,691 sq. ft., 130'x88'x63'). Additionally, the building sets the reserved design criteria for the outbuildings on the base which handsomely support their more ornamental Spanish Colonial Revival contemporaries. Features which characterize these original outbuildings include flat roofs, shallow parapets which are slightly stepped; and severely unadorned exterior walls. Windows are rectangular in form and provide the dominant design ornamentation.

Although these buildings do not provide the obvious ornamentation, stylistic historicism or landscaped surroundings of the more apparently significant original Spanish Colonial Revival structures, they exemplify an extremely sophisticated design criteria of their own which greatly adds to the overall cohesion of the existing campus. In their own right, the Gymnasium, along with similarly designed original 1933 outbuildings such as the Garage (buildings #21 and #22), are major factors from the original 1933 design which make NAS Moffett Field so architecturally distinguished .

115560 NPS-94000045-0013 ID

BUILDING #23, INSTRUCTION BUILDING

Fronting on Akron Road, the former dispensary is one of the buildings that defines the original architectural design and is symmetrically placed, opposite building #25, to balance the entrance to the base's formal plan. The two story, above grade, building is basically a "T" form executed with the typical elements of the Spanish Colonial Revival architecture, low pitched tile roof, stucco sheathing and terra-cotta ornamentation. The front facade has a central entrance recessed behind three arched openings that form an arcade. Terra-cotta surrounds decorate the three windows above the entry and the doors at the east and west ends. The building, originally the base dispensary, was enlarged by the U.S.Army's Air Corps in 1936, when extensions were added to the rear and the east end. The building is 105 feet by 96 feet and 10,995 square feet of floor space.

Of the original buildings, #23 and #25 are significant because of their representation of the Spanish Colonial Revival design and for their locations at the entrance of the working station. Opposite each other, across the central lawn mall, these buildings provide symmetry to the original plan.

BUILDING #25 THEATER 115562 NPS-94000045-0015 ID

The theater, two stories over a basement, is a typical example of the significant supporting buildings that define the original architecture. The "T" form is executed with a low pitched tile roof, stucco sheathing and terra-cotta ornamentation. The typical protected entry is behind an arcade that, in this case, is projected forward. The fenestration, again typical of the dominant style, is symmetrical for all floors except those voids above the entrance. Here the pattern changes to a band of windows divided into three elements that balance the three arches of the arcade. The building is 150 feet by 110 feet in an irregular plan that accommodates 7,745 square feet of floor space.

BUILDINGS #21, #22 AND #24 - GARAGES 115558-0011 115559-0012 115561-0014 ID

This group of detached garages are supportive elements in the historic district. Each is one story and is constructed using typical materials and simple forms of the ancillary buildings. Buildings #21 and #22 retain the original use and design, including corner parapets. The buildings, located behind Building #20, are almost identical, 98 feet by 24 feet with garage door openings facing each other. Building #24, located behind Building #23, was the ambulance garage. It is smaller 45 feet by 30 feet. The large garage door openings have been infilled and the interior space modified for administrative offices.

The garages are significant supportive buildings that compliment the architecture of the larger buildings. Building #24 retains the original mass and form but, the alterations have changed its appearance as a garage.

BUILDING #10 - HEAT PLANT 115551 NPS-94000045-0004 ID

One of the original buildings, the heat plant is a large industrial building of block massing in an irregular "T" form that is two stories in height. A single story element fits into the south west corner. Typical of power plant design, the dominate feature is the fenestration. This building has window banks that extend to the second story. A coursing separates the massing with smaller rectangular windows above the band. In keeping with the dominant architecture, this utilitarian building is decorated with a simple surrounds at the entrances. Flat arches top the tall window banks. The glazing is rectangular pane divided mullions. Most of the first floor windows have transoms that are operable. While the upper rows are all operable. A second coursing divides the lower portion of walls at about four feet, the basement line. Building #10, is sheathed in stucco with a flat roof. This building is a handsome version of a utilitarian industrial design.

The heat plant is one of the original buildings. It is significant as an example of the dominate architectural design stripped to the essence, entrance surrounds and arched windows, for industrial use.

STRUCTURE #5 - Water Tower: 115550 NPS-94000045-0003 ID

Supported by a tall steel frame, the water tank is topped with a conical roof. The traditional red and white checkered paint defines this classic industrial design. One of the original structures, the water tower is a functional and visually distinctive feature.

BUILDINGS A THROUGH I AND ANCILLARY GARAGES A-1 THROUGH I-1

REPRESENTATIVE SINGLE FAMILY RESIDENCES (COMMANDING, SENIOR AND JUNIOR MARRIED OFFICERS QUARTERS):

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115584

The original 1933 detached residential structures are all designed in a like architectural style of which any single building represents an archetype for the whole. The example used here is site #A1, which is referred to in the 1933 landscape plan as the "Commanding Officers' Quarters".

The site consists of a very simple, two-storied, rectangular-planned single family residence that is constructed of wood frame with a low gabled red Spanish tiled roof over a very plain stuccoed exterior (which is punctuated by a formal placement of both windows and doors). A simple chimney adorns the western facade. An attached single-storied, round-arched breezeway connects the residence with a large, two-storied, rectangular-planned garage set slightly behind the main structure.

Stylistically, the residence reflects all of the specific design criteria which unifies all of the original 1933 Spanish Colonial Revival architecture on the base. Windows are almost flush with the plain exterior walls. They are also essentially rectangular in shape, double hung, multi-paned and symmetrically placed along the facades. A colored, projecting stringcourse separates the two stories. The front entry is the most prominent exterior feature with a slightly recessed almost flat arched entry with projecting surrounds. An ornamental sidelight window is balanced by a large wrought iron projecting lamp on both sides of the main entrance.

Landscaping is characteristically both formal and very well maintained. The very large mature trees add immeasurably in setting apart the residential quarter as an oasis amid the functioning base. The open greenswards that distinguish the street directly tie in with the more formal axial plan of the rest of the base. The curved street pattern illustrates the influence of contemporary suburban design on such residential planning even on a military base.

The original 1933 detached residences form a key architectural component in the significant whole that distinguishes the site plan of the naval air station. Along with the verdant landscaping and extra wide spacing, this enclave of buildings helps define all that is special about the site from a design perspective.

115555 NPS-94000045-0008 ID

CONTROL TOWER: (AEROLOGICAL BUILDING FLIGHT CONTROL TOWER) BUILDING #18

The site consists of a moderately-sized (3590 sq. ft.), two-storied building with a centered third story, hexagonal-shaped Control Tower. The structure is designed on a slightly varied rectangular floor plan with a very minimal attempt at exterior ornamentation. It is another of the utilitarian structures from the original plan that exhibits hints of the Spanish Colonial Revival design of the major buildings (in the centered round arch, the overscaled twin wrought iron Spanish styled lamps on both sides of the entry and the ubiquitous terra cotta surrounds ornamenting the front door). Otherwise, this structure is very simple in its design. Its walls are unadorned plaster. Windows are slightly recessed, rectangular in plan, multi-paned, double hung and symmetrically placed along the exterior facade.

The hexagonal tower is, along with the projecting metal tower above, the most distinguishing feature of the structure. It is characterized by its band of vertically oriented windows on each of the eight faces, as well as the iron railing which caps the flat-roofed tower from above.

The building's significance is due both to its history as the original Control Tower for the air station, as well as to its architectural design which once again exemplifies the sophisticated aspects of the original 1933 plan. The structure provides a transition between the more historically refined Spanish Colonial Revival architecture and the simple, yet equally impressive, more modern styles of the utilitarian outbuildings. It is the cohesion provided by the interaction between these two styles that provide the stylistic excellence of the historic core plan.

115564-0017 115565-0018 ID

TWIN SMALL TOWERS (FLOOR WATCHTOWERS): BUILDINGS #32 AND #33

These two twin sites (#32 and #33) consist of very small, two-storied towers that are distinguished by their very unusual design. They are towers that are distinguished by their very unusual design. They are very small structures (578 sq. ft., 14'x14'x25') that appear to be composed of a standard two-story rectangular tower with flat roof joined to a slightly smaller two-storied rounded tower with like flat roof that is capped with metal railing. The buildings are very simple in form. There are really no specific architectural embellishments. They exhibit all of the standard features of the utilitarian structures on the base without any ornament. Recessed, double-hung, multi-paned windows provide the major characteristic design feature which ties them into the surrounding historic core buildings. A prominent projecting stringcourse characteristically separates the two floors.

The significance of these two small utilitarian buildings is primarily in their unique function and form. They are very site specific and add a distinctive counterpoint to all of the rectangular shaped structures on the base. They are architectural curiosities that add immeasurably to the historic and architectural importance of the site.

INTERIOR SPACES:

Naval Air Station Moffett Field has been in continuous use since it was constructed. During the years the interiors of the buildings were altered to accommodate changes in uses and space requirements. The alterations have redesigned the original interior space plans, removed the original surfaces and changed the spacial feeling of the interiors. Due to the alterations, the interiors do not retain architectural integrity or historic significance.

NON-CONTRIBUTING BUILDINGS

Within the boundary of the historic district the number of non-contributing buildings exceeds the number of significant buildings and structures. This unusual ratio does not diminish the significance or integrity of the district. Most of the non-contributing buildings were constructed after the period of significance and are primarily small utilitarian constructions. The Chapel and heating plant, buildings 86 & 87 were constructed after the period of significance yet are designed in the idiom of the district. Thus, Naval Air Station Moffett Field, despite the imbalance in numbers of contributing and non-contributing buildings, maintains exceptional integrity of the 1933 station plan and architectural design.

The International style buildings were predominately constructed after 1944 and are not 50 years old. Therefore, they are not eligible for listing at this time. The Post Office, building #67, constructed in 1943, one of the finest examples of this style, is not significant as an individual building and should be included with the later International style buildings.

S-94000045

SIGNIFICANT AND CONTRIBUTING BUILDINGS

	BLDG. #	CURRENT USE	ORIGINAL USE
ID	1 115548	Hangar #1	Hangar #1
2	" 2 115549	Gymnasium	Balloon Hangar
3	" 5 115550	Water Tank	Water Tank
4	" 10 115551	Heat Plant Building	Storehouse
5	" 15 115552	PW Shop	Fire Station/Laundry/Garage
6	" 16 115553	PW Shop	Locomotive Crane Shed
7	" 17 115554	CPWP Administration	Administrative Building
08	" 18 115555	NAV RES Administration	Aereological Center
09	" 19 115556	BEQ	BEQ/Brig
010	" 20 115557	BOQ	BOQ/Mess Hall & Galley
011	" 21 115558	BOQ Detached Garage	BOQ Detached Garage
012	" 22 115559	BOQ Detached Garage	BOQ Detached Garage
0013	23 115560	Instruction Building	Dispensary E
0014	24 115561	Administrative Office Building	Ambulance Garage
-0015	25 115562	Base Theater/Recreation Service/Thrift Shop	Bowling Alley/Recreation Building
-0016	26 115563	Gate House/Iron Fence	Gate House/Iron Fence
-0017	32 115564	Storage	Tank House
-0018	33 115565	Storage	Water Tower
-0019	37 115566	Scale House	Scale House
-0021	A, A1 115567, 115568	Officers Housing and Garages	Housing and Garages
-0023	B, B1 115569, 115570		
-0025	C, C1 115571, 115572		
-0027	D, D1 115573, 115574		
-0029	E, E1 115575, 115576		
-0031	F, F1 115577, 115578		
-0033	G, G1 115579, 115580		
-0035	H, H1 115581, 115582		
-0037	I, I1 115583, 115584		
-0036	46 115585	Hangar #2	Hangar #2
-0039	47 115587	Hangar #3	Hangar #3
-0041	055 115588	Heat Plant for Hangars #2 and 3	Heat Plant for Hangars #2 and #3

SIGNIFICANT OBJECTS

-0041	40 115589	Flagstaff/Commons	Flagstaff and Commons
-0042	115590	Memorial Anchor	Anchor

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

0043 115591
0044 115593
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0047 115596
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0087 115637

NON-CONTRIBUTING BUILDINGS

1930-1933 - Altered (loss of architectural integrity): Buildings # 3, #6, #12, #13, #14, #29, #31, #36, #501.

1940-1944 - Altered (loss of architectural integrity): Buildings #240, #241, #242, #514, #515, #516, #517

Assembly Buildings: #45, #85, #115

Quonsets: #81, #117

Sheds: #34, #44, #83, #347

1940 - 1944 (outside period of Significance) Buildings: #67, #64, #86, #87,

All buildings and structures constructed after 1944, including: #76, #77, #123.

All ancillary buildings and structures, in proximity to Hangars #2 and #3, that are very small, altered or constructed after 1944; #79, #98, #186, #346, #350, #367, #368, #396, #440, #470, #472, #499, #539, #540.

Several factors contributed to the commissioning of the U.S. Naval Air Station Sunnyvale on April 8, 1933. Of foremost importance was the vision for the future of aircraft and influence of Admiral William A. Moffett. Appointed by President Harding on July 25, 1924, to be the first as Chief of the Naval Bureau of Aeronautics, Admiral Moffett had already established himself the proponent for increased Naval aircraft as an integral component of the Navy's ability to control the seas off the coasts of the United States. In the 12 years that Admiral Moffett lead the bureau, the U.S. Navy was catapulted into the lasting interlocking strategy of Naval presence in the air as well as the sea. But he also spoke of the future in commercial aviation. In the 1920's, he appears fascinated with the lighter than air technology of the dirigibles. The success of the zeppelins in WWI contributed to the development of the larger dirigibles. This was however, marred by the disasters resulting from the flammability of the hydrogen used to fill the chambers. Each country involved in the hydrogen filled dirigibles experienced tragedy. A memorial plaque in Shenandoah Plaza at Moffett Field commemorates USS SHENANDOAH that was lost with a crew of 14 on September 3, 1925. The largest of the dirigibles, HINDENBERG, burst into flames over Lakehurst, New Jersey in 1937, culminating a series of tragic losses involving the dirigibles and hydrogen. Helium, produced only in Texas and Kansas, had been known to be a reasonable replacement for hydrogen, but was prevented from export by the 1925 Helium Export Act. Moffett began a lobbying campaign to have the U.S. Navy use helium filled dirigibles to patrol the coasts. In Moffett's plan, these giant rigid frame airships would provide the long range observation for the surface Navy below. He believed the dirigibles could be fashioned to carry small planes and might even be equipped with bombs. The idea was not far-fetched. The technology of the 1920's allowed dirigibles which could stay aloft for 14 days and fly 10,000 miles. The lobbying proved successful with the 1926 congressional authorization for two Naval dirigibles capable of carrying aircraft and a new aircraft base for the west coast. The dirigibles were to be built by the Goodyear-Zeppelin Corporation in Akron, Ohio. The first to be completed was based at Lakehurst, New Jersey. The selection of the site and construction of a base to service the second would be undertaken on the west coast.

The west coast site appeared to be slated for Camp Kerney near San Diego when the northern California politicians realized the opportunities to be created and forced the federal planners to accept applications from the entire west coast. Applications were received from 997 locations. San Francisco mayor, James Rolph, saw the benefit to the Bay Area even though his city did not have a site suitable for the base. The appeal was for 2,000 acres with unobstructed approaches, clean water, rail access and good flying weather was heard by Mrs. Laura Whipple, a recently established real estate broker from the East Bay. Familiar with the Sunnyvale area, she selected the Rancho Unigo, a former Indian Reservation, that seemed to meet all the criteria. Appointing herself "Chairman of the Landholders Commission", she obtained an option for 1,750 acres at the price of nearly $500,000. She wired San Jose congressman, Joseph Free,that a perfect site for the dirigible base had been located and optioned. The proposal from San Diego offered free land; in order for the Sunnyvale site to be selected the same offer would have to be made. Under

the leadership of presidents of the Chambers of Commerce from Mt. View and San Jose, a campaign to raise the funds and solidify the offer went forward. The newspapers, including the San Jose Mercury Herald, were enthusiastically in support of the proposal and offered publicity and public relations material to support the proposal. After three years of study and debate, it was time for a decision. On December 28, 1930, the vote registered by the House Naval Affairs Committee for H.R. 6810, introduced by Congressman Free, selected Sunnyvale by 18 to 1 and Camp Kerney as the auxiliary base. As a member of the West Coast Naval Airship Base Board, Moffett had favored Sunnyvale while the Secretary of the Navy, Charles F. Adams, preferred Camp Kerney.

Once selected, the issue remained to raise the money to purchase the land. Under the leadership of A. M. Mortensen, President of the San Jose Chamber of Commerce, the funds were raised and on August 2, 1931, the Chamber's check for $476,165,90 completed the purchase of 1000 acres of the Rancho Unigo. Also on August 2, 1931, the land was transferred to the U.S. Navy for $1.00. This completed a long and arduous partnership between the cities of the Bay Area to gain the prestige, jobs and economic interests that would follow the base.

The budget for constructing the base was $5,000,000. The U.S. Navy of Yards and Docks would be responsible for the design and coordinate the construction. Lt. Commander Earl Marshall was given the responsibility. Ernest Wolf, an experienced engineer from the Goodrich Zeppelin Corporation, was to be the Associate Engineer. Hangar #1, as it would be called, was the most important building and received the first attention. The design had been refined in Akron by Dr. Hugo Ekener, to form a rounded building that followed the form of the dirigible. Enormous curved doors on each end would slide over the building, rolling on 40 wheels over standard gauge railroad track, and propelled by 150 hp electric motors, thus minimizing the turbulence and problems encountered with past designs. In fact, it was the window patterns that dictated the north-south orientation and siting of Hangar #1; the rest of the base followed. Of the $2,250,000 budgeted for the hangar, $1,116,044 was awarded to the Wallace Bridge and Structural Steel Company of Seattle to fabricate the steel for the structure and doors. Seims-Heimers, Inc. of San Francisco bid $398,937 for the roofing, windows and siding on the airdock that would measure 1, 133 feet long, 308 feet wide and 198 feet high. The floor area is just over eight acres. A structural space frame, the design and construction of this hangar remain a feat unparalleled in the engineering of enclosed space.

Railroad tracks ran through the hangar, culminating at the mooring tower. The tower secured the dirigible to the ground by mooring lines. This tower has been removed. The other large structure that was necessary for the dirigible was the helium tank that was located in front of the hangar.

The plan for the base and the design of the buildings was also undertaken by the Naval Bureau of Yards and Docks.

The style for the buildings, Spanish Colonial Revival, is reflective of the popularity of the revival movement and the desire of the local politicians to have the base designed in the "California Style" of white stucco walled buildings with red tile roofs. The plan and building design was very formal, an axial orientation with the bemouth hangar to the east and the base extending west. Following the Spanish influence, a large plaza is the central element with the most ornately decorated building, the Administration Building, at the head of the plaza behind the flag pole and in front of the hangar. On the south side of the plaza were located the dispensary and Bachelor Officers' Quarters. To the north were the recreation building and the barracks. To the southwest on the cul-de-sac were located the nine officers' houses and garages. Extending to the east, and south, behind this formal plaza arrangement were the utilitarian buildings, fire station, garage, laundry boiler plant, locomotive and crane shed, shops, helium storage and water tower. To the north were the commissary, store house, gas station, balloon shed and storage buildings. Directly behind the Administration Building was the cafe (later the Officers' Club), and of course, the Hangar. The base was designed in anticipation of the importance of the automobile. Broad roads, large parking areas and garages were incorporated in the plan.

Landscaping was carefully planned to mature in harmony with the buildings and circulation elements. The area considered the Naval Air Station Sunnyvale Historic District maintain the integrity of the original design and represent one of the finest formal plans for a government facility in California. It was a forward-thinking plan with expansion to occur outside the formal plaza, thus the quality of design has been maintained. The original base is a one-of-a-kind facility in the Santa Clara Valley with great importance in the architectural heritage, facility planning and economic growth of the region.

The primary significance of the historic district is the association with the "lighter than air" dirigible program. The dirigibles, to be the eyes in the sky for the Navy, were in operation for a relatively short time. USS MACON, one of the two dirigibles constructed for the Navy, was christened by Mrs. William Adger Moffett (wife of Admiral Moffett) on March 11, 1933. An article about the landing in Sunnyvale was reported in the October 15, 1933 edition of the San Francisco Chronicle that read, "30,000 Thrilled as the MACON Moors at Home Station." The sister dirigible, AKRON, had been lost on April 13, 1933, making the MACON the last dirigible. For 16 months, USS MACON was a common sight over the Santa Clara Valley as it performed in a number of military maneuvers with the Pacific Fleet. Admiral Moffett had been well aware that the slow moving dirigibles could be of great benefit when assigned as an observatory for the fleet, but were vulnerable if used in maneuvers with the fleet. Shortly after arriving at Sunnyvale, USS MACON was deployed on tactical maneuvers with the Pacific Fleet. Equipped with an internal hangar and steel frame hoist termed a "trapeze", USS MACON carried four small fighter planes. The Sparrowhawks (F9C) were bi-plane fighters developed specifically to be carried in the dirigible by Curtis. Each weighed only 2,500 pounds with a pilot. As an airborne carrier, the dirigible was a hulking target that "failed to demonstrate military usefulness," according to the Commander in Chief of the United States Fleet, Admiral David Sellers. While returning from maneuvers with the fleet on February 12, 1935, USS MACON experienced a structural failure and crashed into the Pacific. Of the 83 crew, only 2 were lost. It was the headline in the San Francisco Chronicle the next day that told the story, "Dirigible Doomed as Defense Factor, Officials Say." The era of dirigibles was over, the only remaining element of the Moffett five year plan was Hangar #1 and the base at Sunnyvale.

During this period, the U.S. Army Air Corps operated a limited number of blimps in conjunction with observation exercises. In September, 1935, seven months after USS MACON went down, the Army assumed control of the base and Hangar #1. The facility was used by the Army for pursuit and observation activities until 1940 when it was converted to the West Coast Air Corps Training Facility. During this period, the dispensary was enlarged and barracks were added.

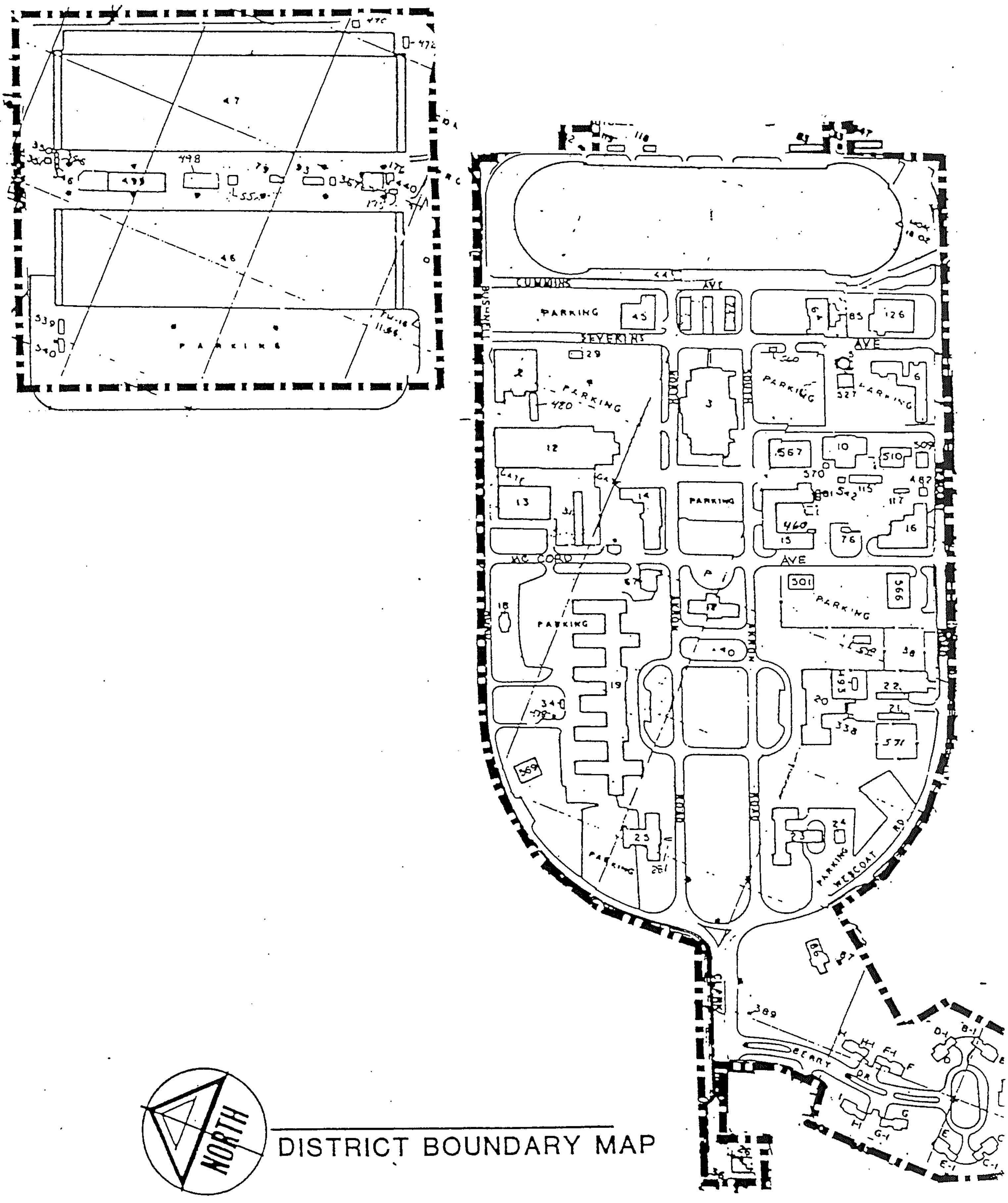
Shortly after the outbreak of WWII, the base was returned to the U.S. Navy. In April, 1942, the base was recommissioned Naval Air Station Moffett Field.

The return to Naval Command was to provide expanded facilities for small blimps and balloons used for coastal observation. Hangars #2 and #3 were constructed for blimps in 1942. They are included in the historic district because of the use as a lighter than air facility, and for their architectural/engineering importance.

One of the most recognizable landmarks in the San Francisco Bay Area, Hangar #1 and the original base are significant in the history of Naval Aviation, defense and in the development of the Santa Clara Valley. From the original base and because of the facility location and landing field, NASA Ames Research Center is located to the north adjacent to the original plaza boundary and at the north boundary of the historic district. It is far easier to measure the importance of the dirigible in Naval Aviation and defense history than it is to measure the enormous impact upon the growth of the defense and space industry in Northern California because of the original location of this base with the 1000+ acres.

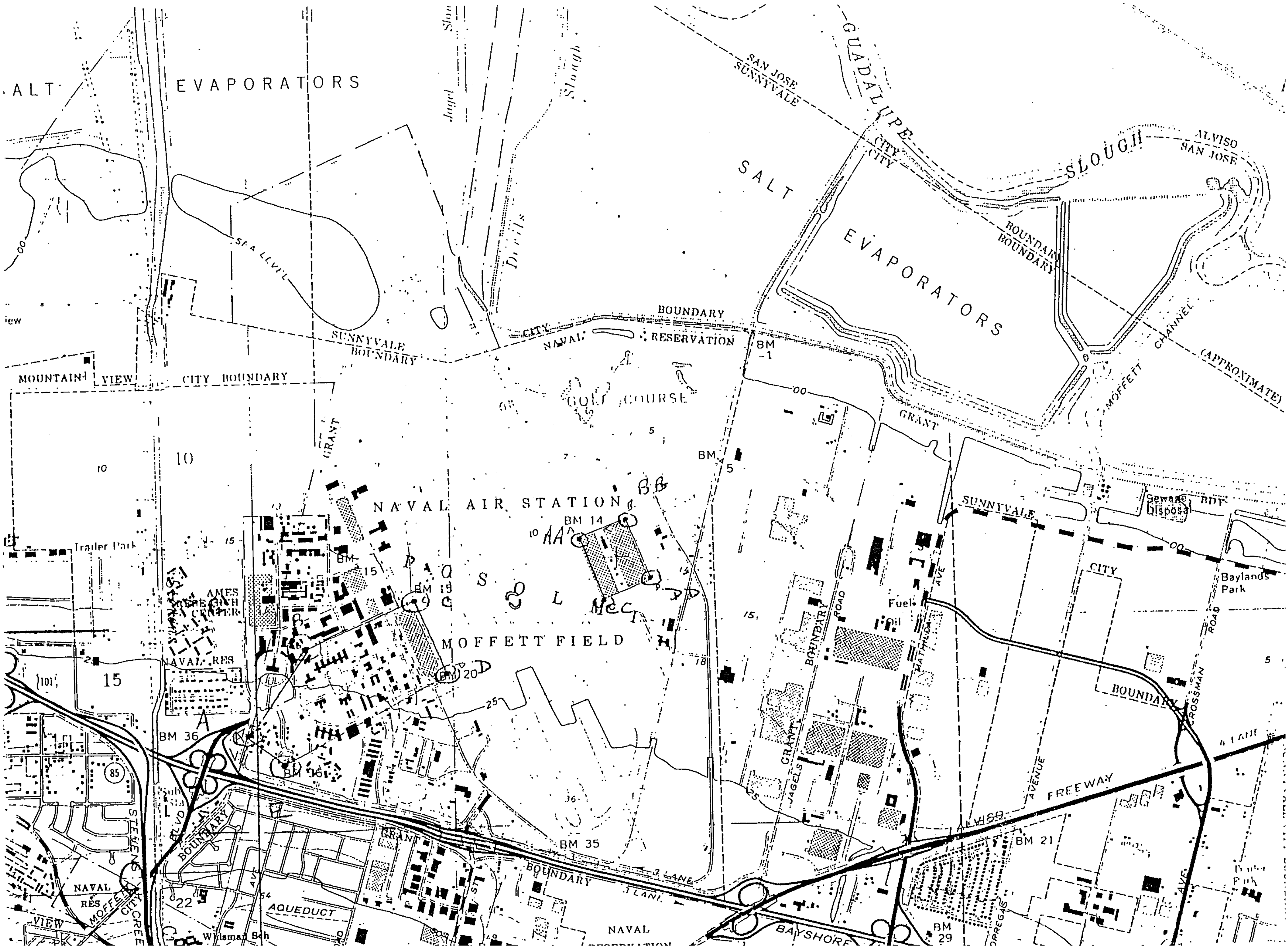
The Naval Air Station Sunnyvale Historic District is recommended for listing in the National Register of Historic Places at the National Level of significance under Criteria A, as the only base designed specifically for the Navy to home port USS MACON, the only dirigible in the fleet, a significant contribution to the broad pattern of our history; and under Criteria C, a facility plan and architectural design that embody the distinctive characteristics of a type, period, or method of construction or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction.

The landscape plan (Y&D drawing No. 115840) was approved on April 29, 1933. This plan shows the base in its entirety.

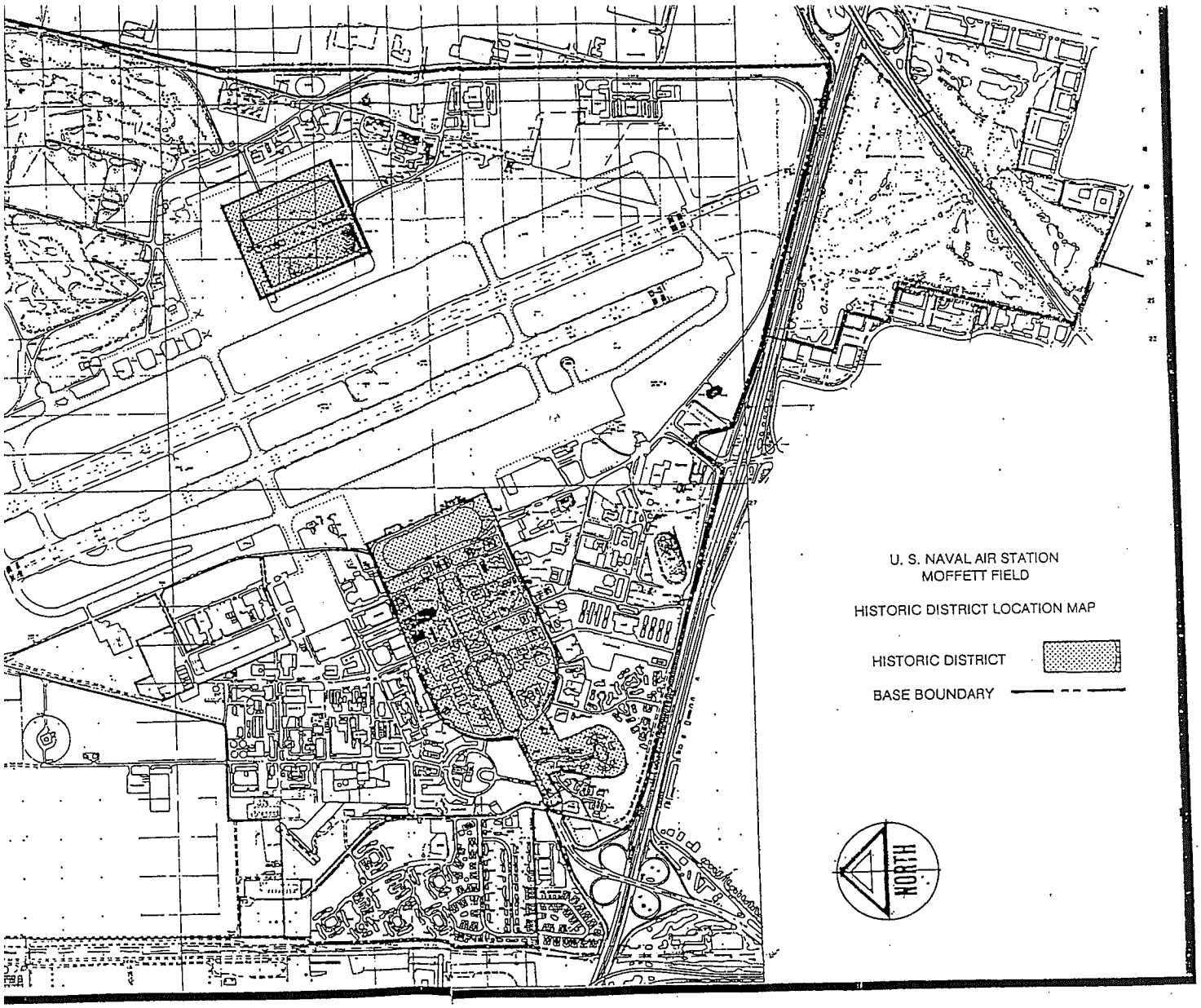


DISTRICT BOUNDARY MAP

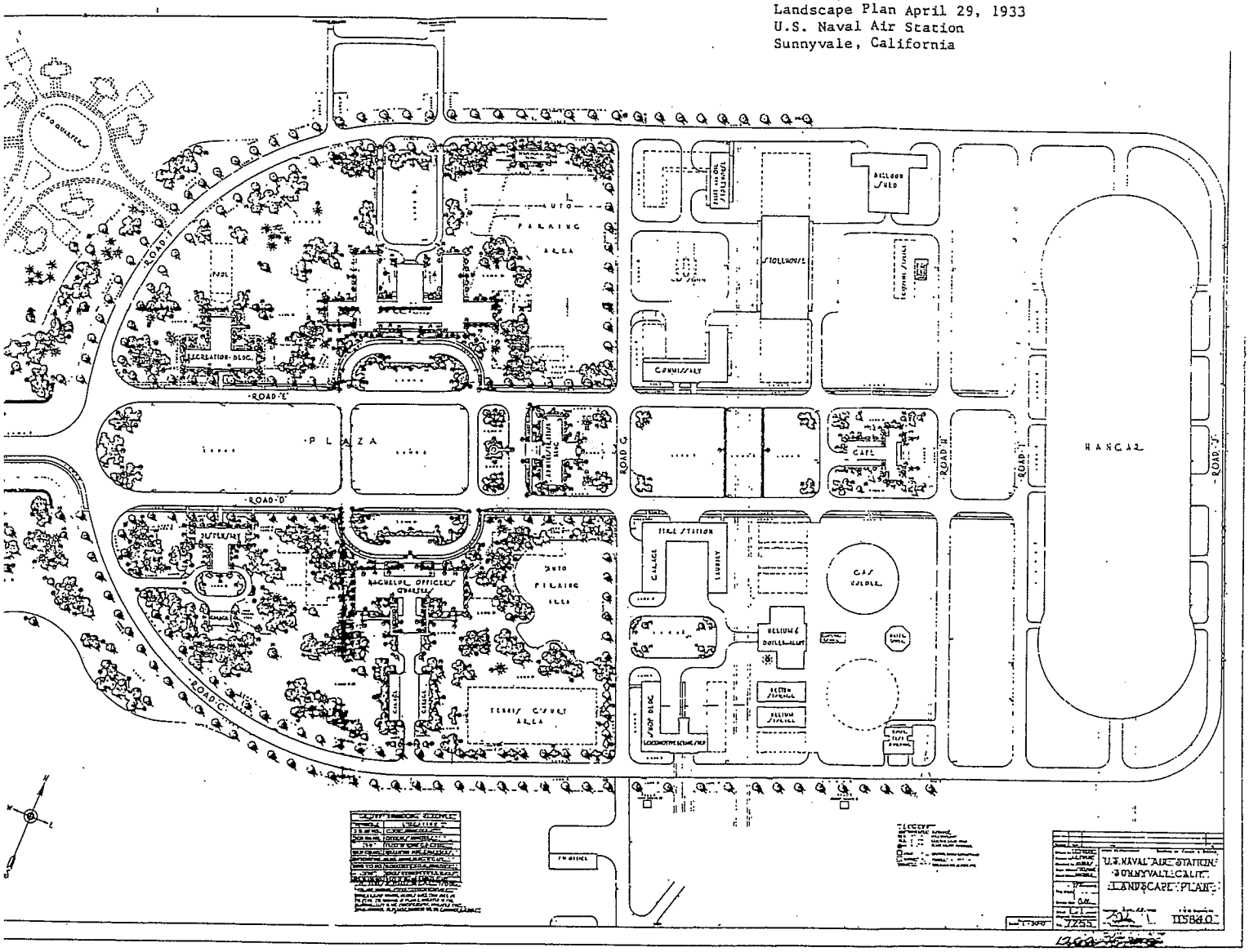
ZONE 10	E	37.7063	122.0530
	A1	37.7095	122.0433
	B1	37.7060	122.0421
	C1	37.7071	122.0394
	D1	37.7105	122.0408

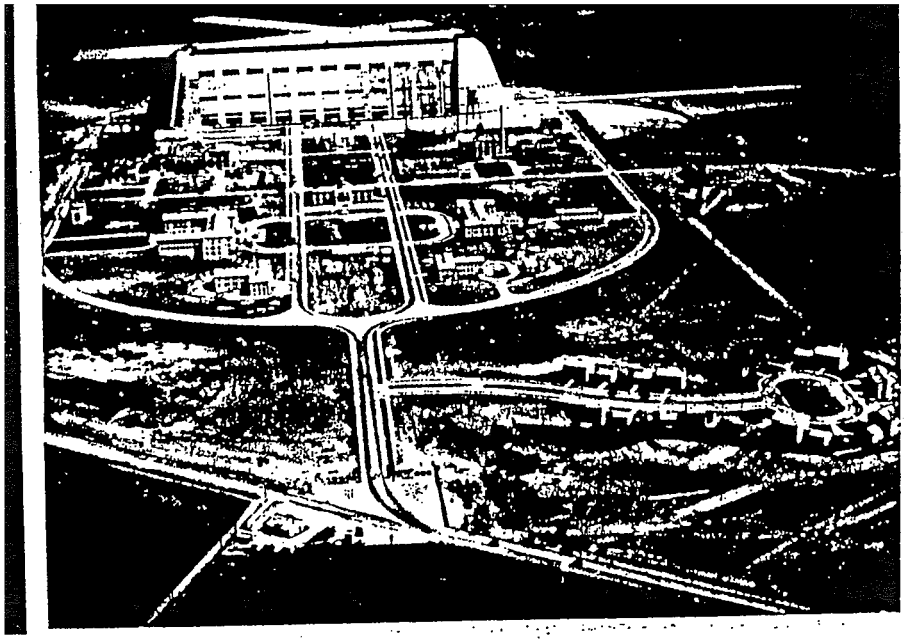


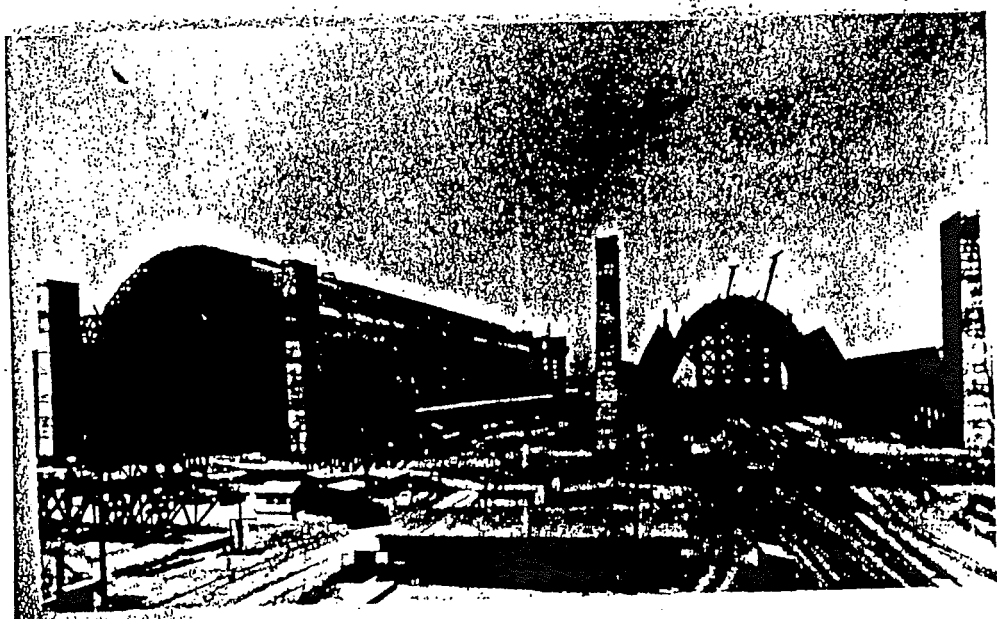
SALT EVAPORATORS
SEA LEVEL
MOUNTAIN VIEW CITY BOUNDARY
SUNNYVALE BOUNDARY
CITY NAVAL RESERVATION BOUNDARY
GOLF COURSE
Devils Slough
Jagel Slough
SALT EVAPORATORS
GUADALUPE SLOUGH
SAN JOSE SUNNYVALE
ALVISO SAN JOSE
CITY CITY
BOUNDARY BOUNDARY
MOFFETT CHANNEL (APPROXIMATE)
GRANT
NAVAL AIR STATION
MOFFETT FIELD
BM 14
BM 15
BM 19
BM 20
BM 5
BM -1
BM 36
BM 35
BM 21
BM 29
Trailer Park
AMES RESEARCH CENTER
NAVAL RES
101
85
STEVENS CREEK
BOUNDARY BLVD
AQUEDUCT
NAVAL RESERVATION
BAYSHORE
FREEWAY
ALVISO
AVENUE
BORREGAS
MATHILDA AVE
Fuel Oil
JAGELS
BOUNDARY ROAD
SUNNYVALE
CITY BOUNDARY
CROSSMAN ROAD
Baylands Park
Sewage Disposal


U. S. NAVAL AIR STATION
MOFFETT FIELD
HISTORIC DISTRICT LOCATION MAP
HISTORIC DISTRICT
BASE BOUNDARY
NORTH

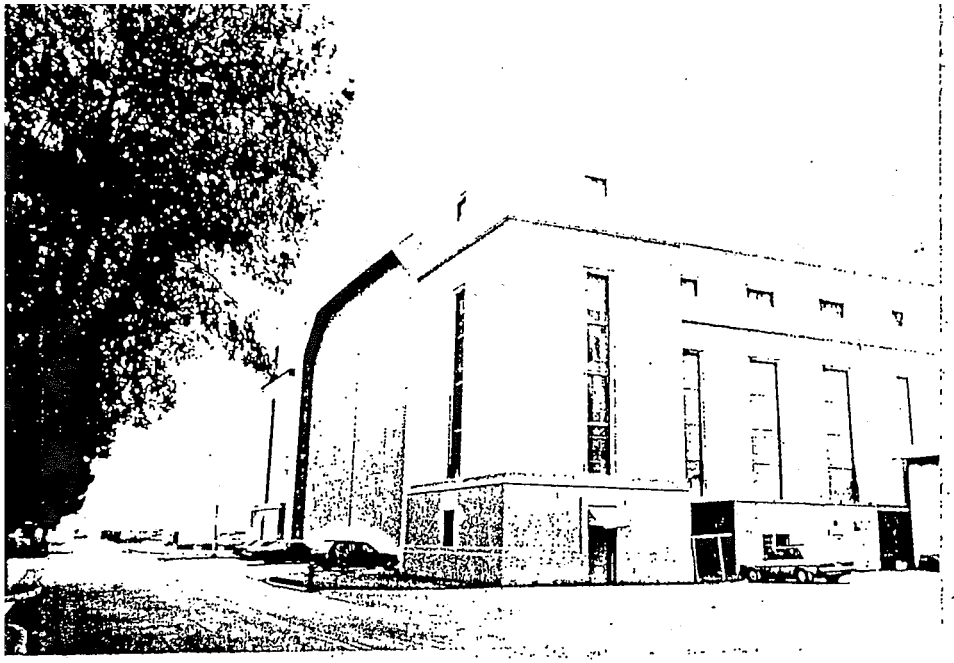
Navy Department-Bureau of Yards and Docks
Landscape Plan April 29, 1933
U.S. Naval Air Station
Sunnyvale, California

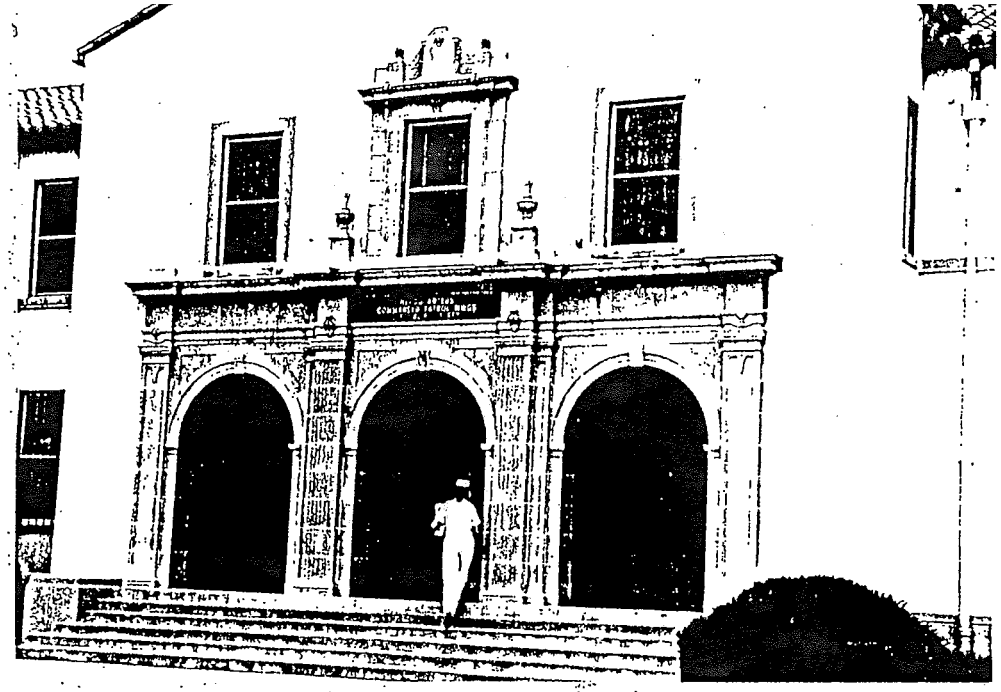


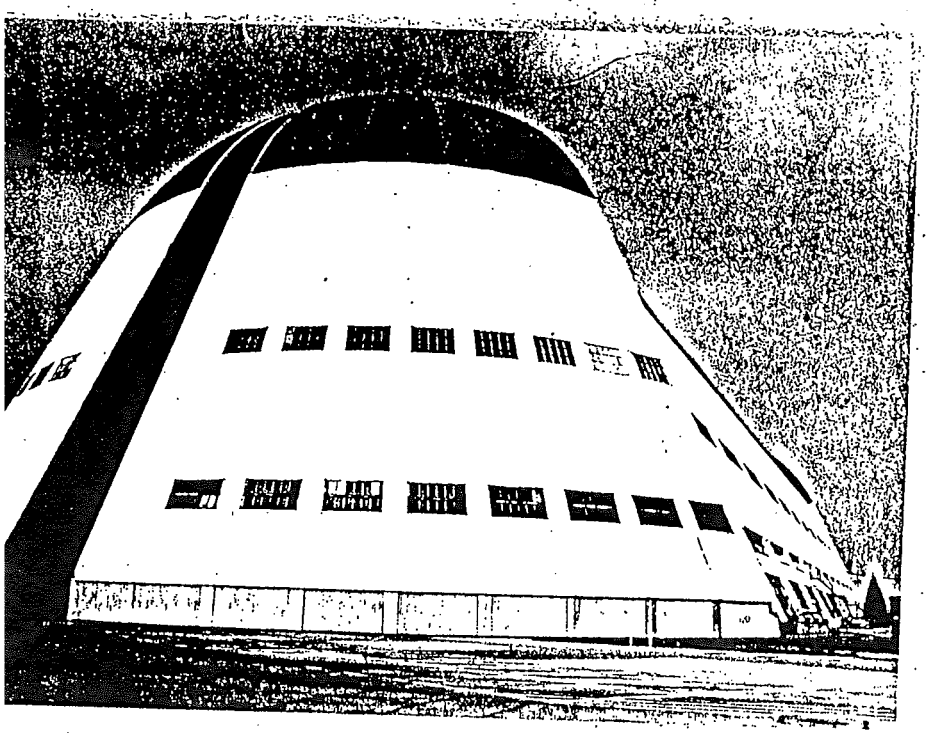


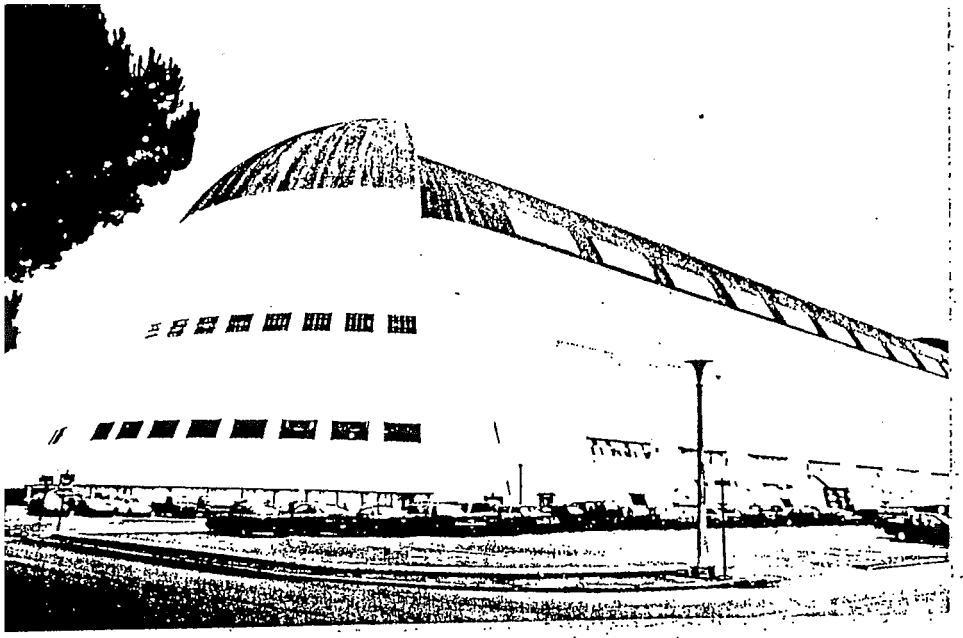


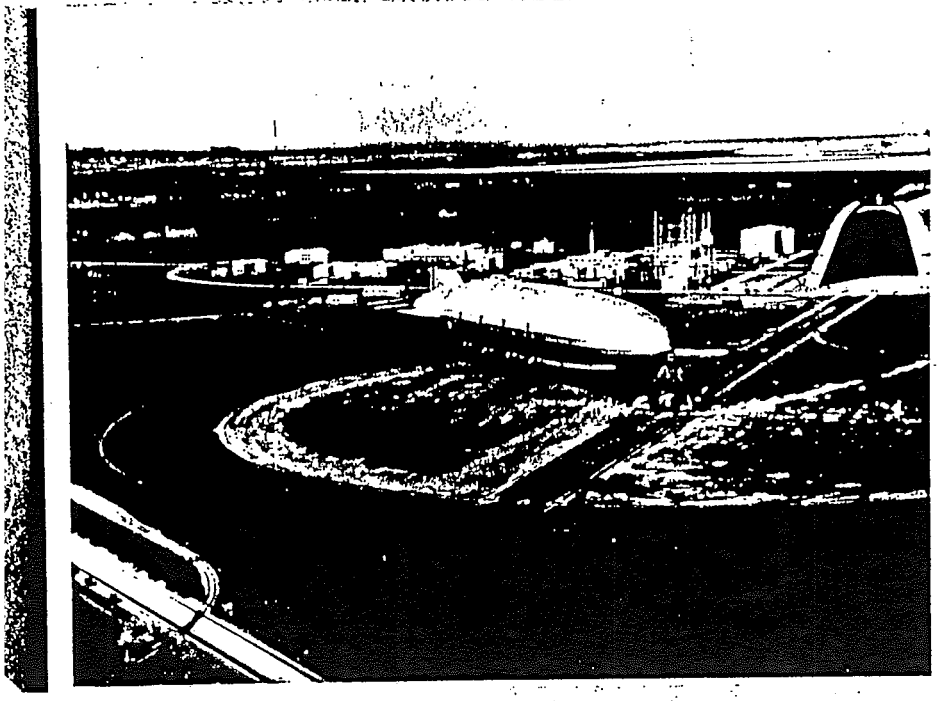
SNVL 1857 Naval Air Station Moffett Field Calif. July 26, 1943
Full View both Hangar #2 and Hangar #3 taken from south end.
Contract NOy-5604 E.W. Heple & J.H. Pomeroy Inc. Contractors

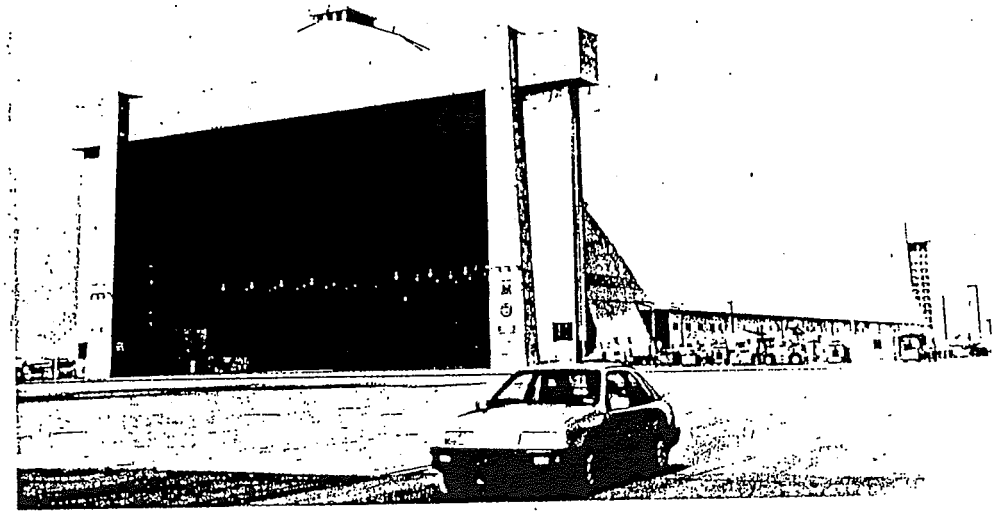


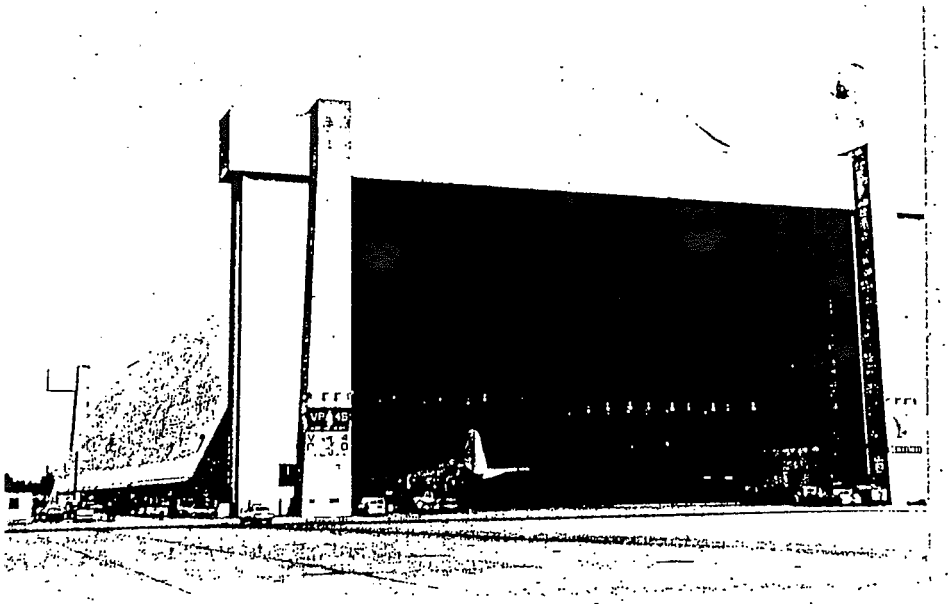


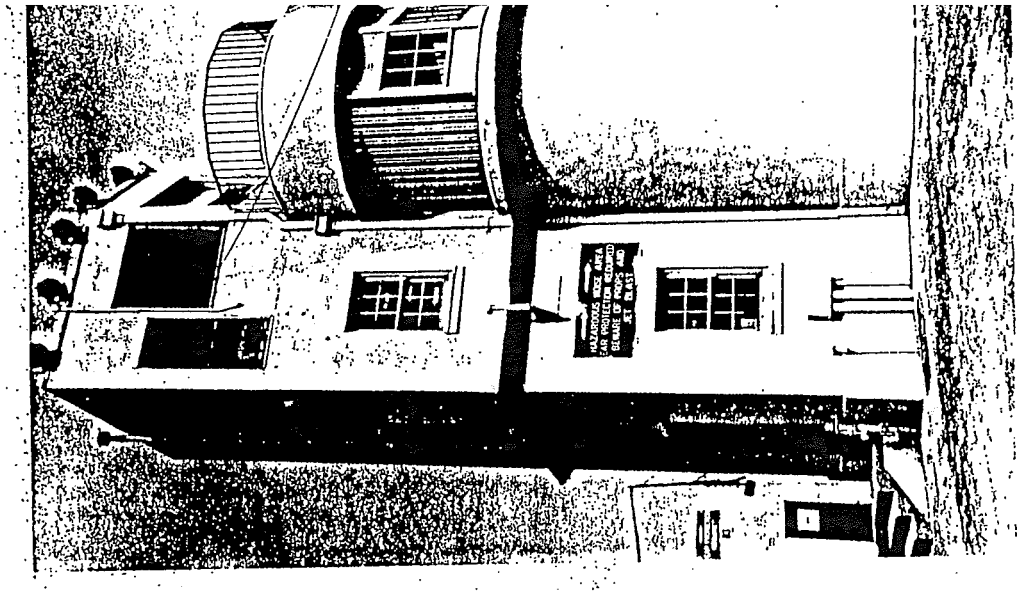


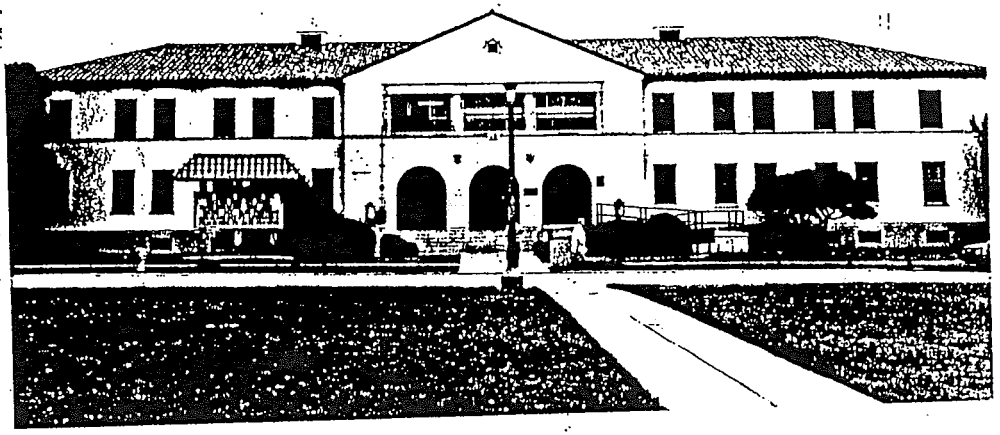


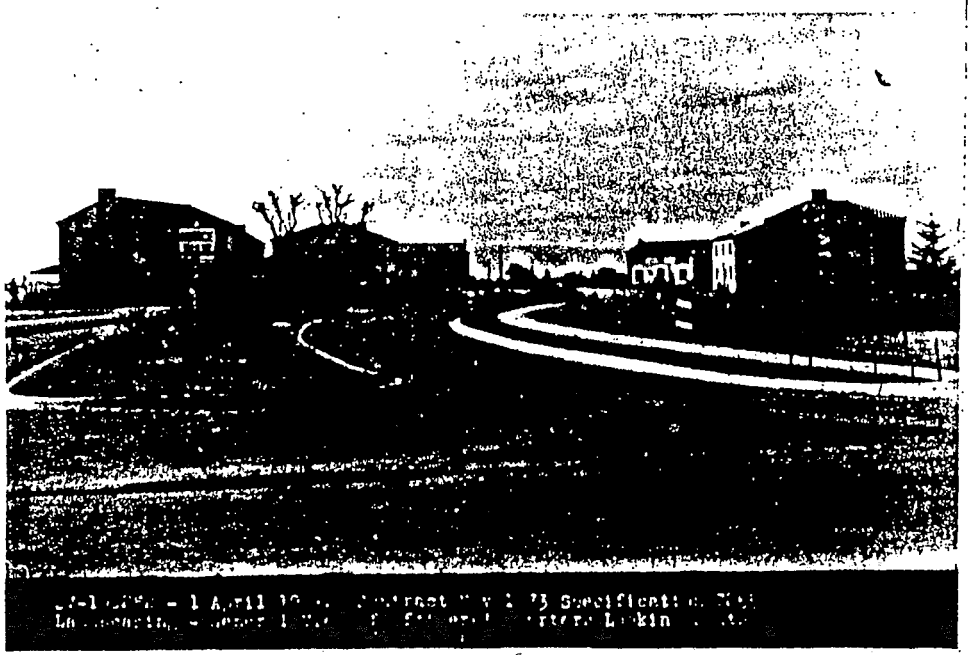


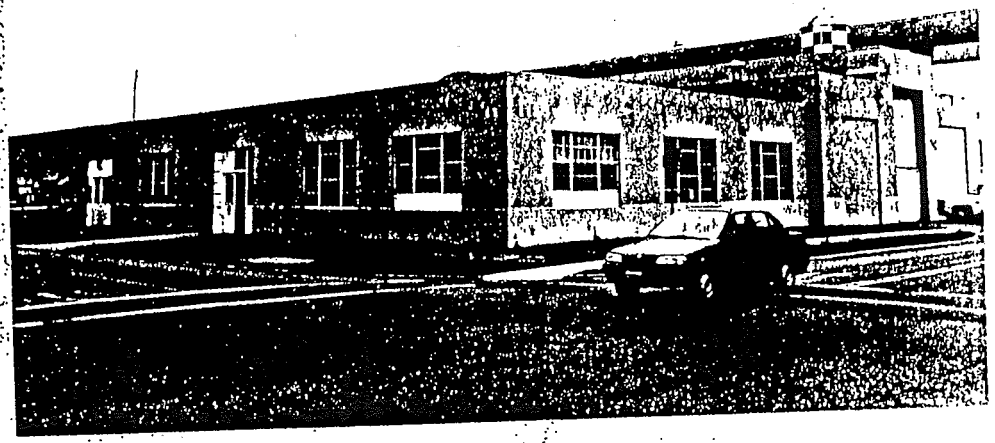


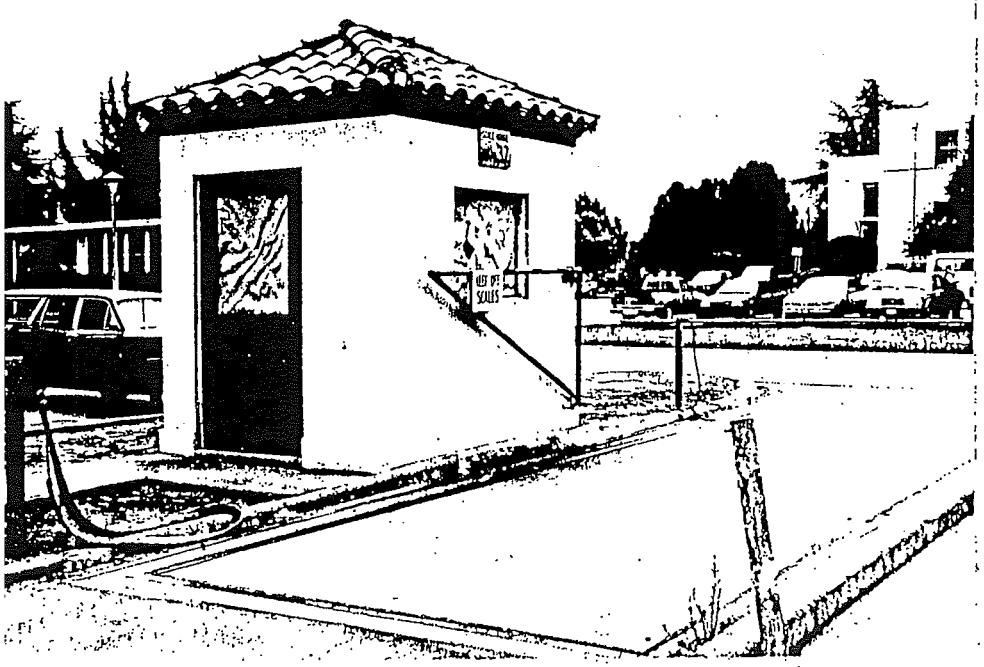


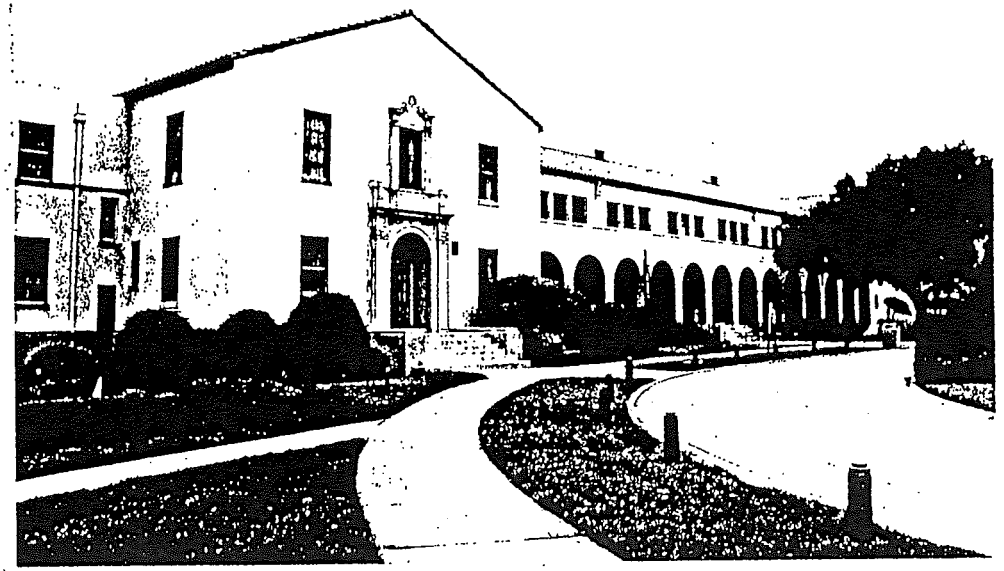










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